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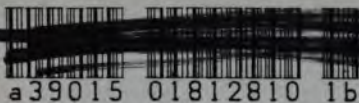
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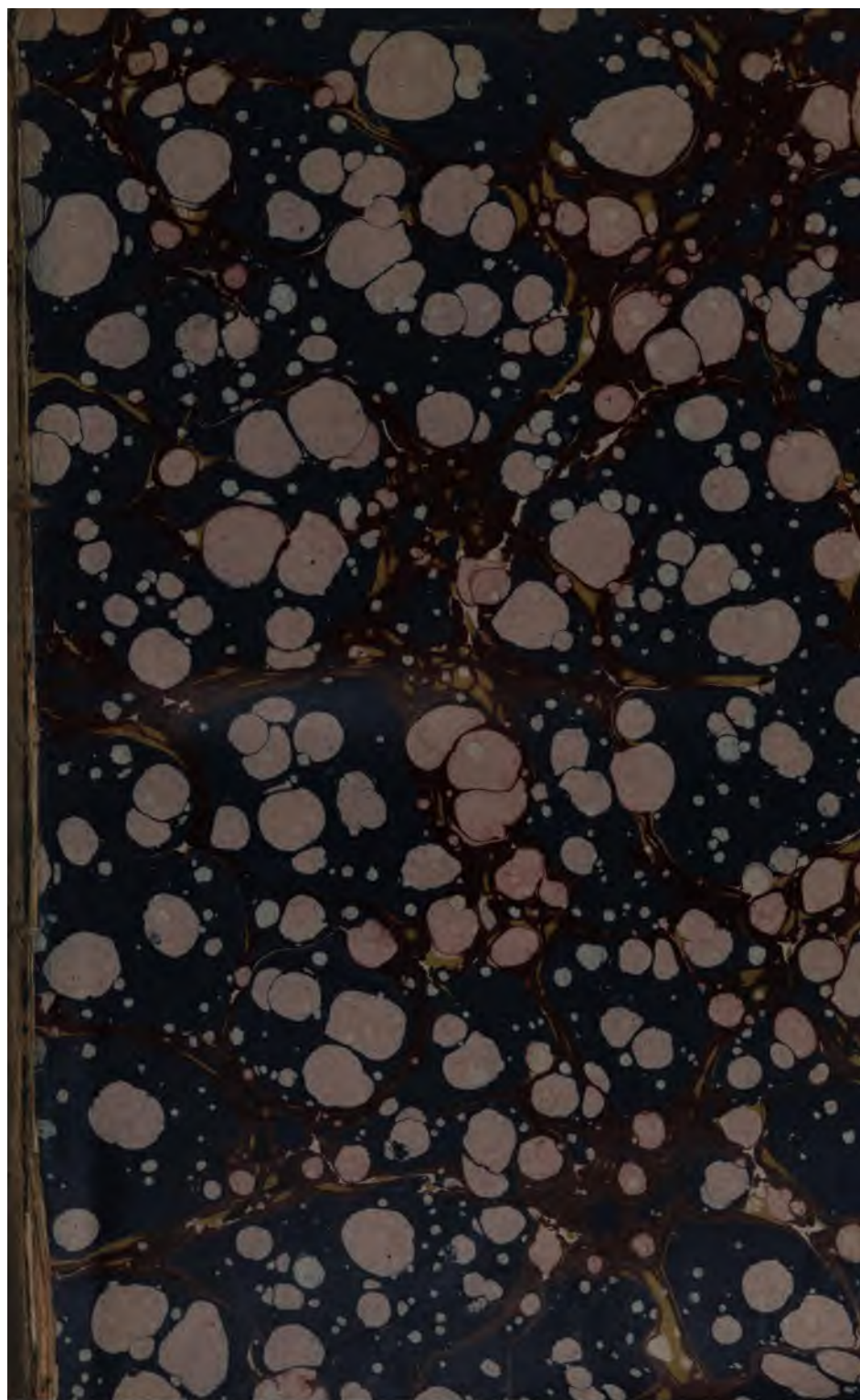
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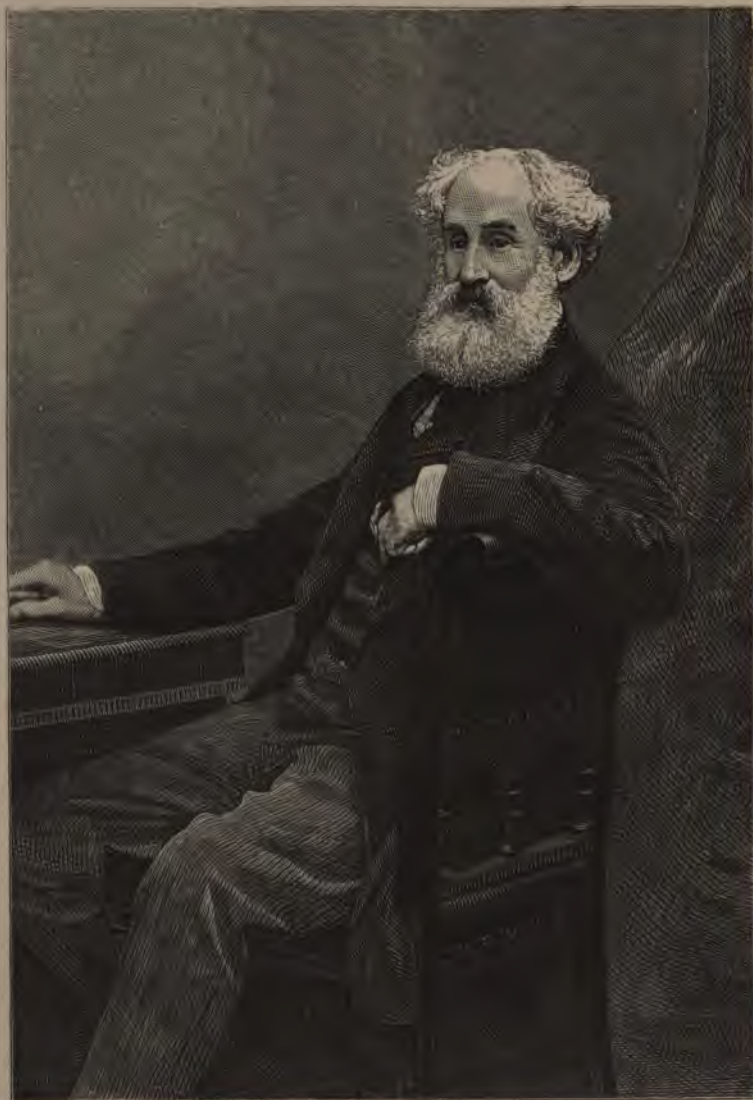
1817



ARTES SCIENTIA VERITAS







Colonel Egerton Warburton.

JOURNEY ACROSS THE WESTERN INTERIOR OF AUSTRALIA.

BY
COLONEL PETER EGERTON WARBURTON, C.M.G.

WITH AN INTRODUCTION AND ADDITIONS,

By CHARLES H. EDEN, Esq.

AUTHOR OF "MY WIFE AND I IN QUEENSLAND."

EDITED BY H. W. BATES, Esq.

ASSISTANT SECRETARY OF THE ROYAL GEOGRAPHICAL SOCIETY

WITH ILLUSTRATIONS AND A MAP.



THE WARBURTON BEETLE (*Stigmodera Murrayi*).

London:
SAMPSON LOW, MARSTON, LOW, & SEARLE,
CROWN BUILDINGS, 188, FLEET STREET.

1875.

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Fig. 24.
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PREFACE.

BY THE EDITOR.

THE form in which the present account of Colonel Warburton's remarkable journey across the Western Interior of Australia is given to the public, requires a few words of explanation.

The gallant leader of the expedition, on his return to Adelaide, enfeebled by the privations and sufferings of his long journey, had little inclination to pen a full narrative of the expedition. He fulfilled the duty of rendering a Report of his proceedings, in the form of extracts from his Journal, to Messrs Elder and Hughes, the gentlemen who bore the expenses of the undertaking; but he had neither health nor desire to undergo the further literary labour necessary to elaborate a complete narrative for general readers. The

Fig. 24-50 m. 19

promoters of the expedition, however, justly thought that some account of the first successful attempt to traverse this vast unknown region—all efforts to penetrate which had previously been baffled—was deserving of permanent record, and would be likely to interest a large section of the reading public; they transmitted, therefore, the original Report to England for publication, with a recommendation that it should be accompanied by a narrative of the more important of the many previous explorations in the same region. Colonel Warburton himself subsequently, in November last, visited his native land, after an absence of more than forty years, and consented to this arrangement, selecting his relative, Mr. Charles H. Eden, who—from his knowledge of Australia, obtained during a residence of some years in Queensland—was well qualified for such a task, to write the required account of previous explorations, which account forms the Introduction to the present volume. During his brief stay in London, of less than six weeks, Colonel Warburton was able to add but little to the information supplied by his Report; his failing eyesight, caused by the fearful sufferings of his journey, rendering

him incapable of writing. Verbally, however, he supplied matter of considerable interest and importance, which Mr. Eden has either interwoven into his introductory chapters, or interpolated, within parentheses, in the Journal. Some few amplifications of Colonel Warburton's own statements or descriptions, supplied in the same way, have been incorporated, at the discretion of the Editor, in the text of the Journal itself.

The majority of readers will, no doubt, see reason for satisfaction in the circumstance that the efforts and struggles of the gallant party, with all their hopes and fears when a lingering death seemed their inevitable fate, are here given exactly as jotted down by the leader, whilst the agony was fresh in his mind. To such the evident fidelity and absence of exaggeration of Colonel Warburton's style will be an additional charm.

To Mr. Eden's very interesting summary of previous explorations, it needs only to be added, that the numerous efforts on the part of the Government and Colonists of Western Australia to penetrate from their side the desert interior, have at length been crowned with success

in the brilliant exploit of Mr. John Forrest, who, starting at about the time of the completion of Colonel Warburton's traverse, struck across the *terra incognita* at a part where it is much wider than where crossed by Warburton, and arrived safely at the Peake Station, on the line of the overland telegraph. The spirit of Geographical Exploration in Western Australia, which in former years had given rise to the remarkable expeditions of Roe, Lefroy, and Hunt, has of late years been greatly encouraged by Governor Weld, under whom the two Forrests, John and Alexander, have successively pushed their investigation farther and farther into the waste of salt-swamps, which seems to occupy the greater part of the interior due east from the Swan River settlements. In 1870 Mr. John Forrest had repeated Mr. Eyre's feat of journeying completely round the Great Bight (from West to East), happily experiencing scarcely any of the hardships which were nearly proving fatal to the whole of the party of the earlier explorer.

The relatives of Colonel Warburton, to whom, on his return to Australia, the final arrangements of the present work were confided, desire to ex-

press their especial thanks to Professor Owen, Dr. Hooker, Mr. J. Gould, and Dr. Henry Trimen (of the Botanical Department of the British Museum), for the assistance they have rendered in determining the species of animals and plants mentioned in the Journal, and in furnishing notes in elucidation of various points. The illustrations are by Mr. Ulick J. Burke.

LIST OF ILLUSTRATIONS.

	PAGE
PORTRAIT OF COLONEL EGERTON WARBURTON	<i>Frontispiece</i>
THE WARBURTON BEETLE (<i>Stigmodera Murrayi</i>)	<i>Title-page</i>
THE START	140
TWENTY-FOURTH OF MAY	165
THE DUST STORM	194
FACING THE ENEMY	231
MARCH DURING AN ECLIPSE	248
WORN OUT BY STARVATION	258
THE LAST CAMEL	284
THE RELIEF	290

MAP OF COLONEL WARBURTON'S ROUTE.



INTRODUCTION.

BY CHARLES H. EDEN.

CHAPTER I.

Western Interior of Australia.—Settlement of Swan River.—
Foundation of the colony of South Australia.—Various
opinions regarding the interior.

IN the slight sketch of Australian Exploration that I propose to lay before the reader as an introduction to the Journal of Colonel Egerton Warburton, I shall confine myself entirely to the western half of the Continent, and to the many attempts that have been made by enterprising men to penetrate the mysteries of the interior of that portion. Though Western Australia occupies a larger space upon the map than any of its sister colonies, an observer cannot fail to be struck by the vast extent of unoccupied—even unknown—country that it contains, and this desolation is the more remarkable when it is considered that within


the boundary of this colony are included the earliest discovered portions of the Continent.

In 1829 Captain Stirling was appointed Lieutenant-Governor of the new settlement on the Swan River, and on his arrival in the month of August of that year this officer found a number of anxious immigrants camped on the banks of the Swan and Canning rivers, with no better shelter against the inclemency of the Australian winter than the tents they had brought with them from England. Every month added to their numbers and to the disorder that prevailed. Not an acre of land had been surveyed; the settlers sat down at random on the river banks; there was no money to procure the common necessities of life from the neighbouring colonies; even the Governor and his officials received large grants of land instead of a salary; and to add to the distress, the immigrants were of a class unaccustomed to manual labour, and totally unfitted for the arduous task of founding a new settlement. By March, 1830, fifty ships, containing two thousand people with property—not money—to the amount of 100,000*l.*, had arrived, and as yet hardly twenty houses were standing at the new township of Perth for their accommodation. Many of the

disappointed adventurers found their way to the adjoining colonies, and for twenty years the remainder fought manfully for existence; yet so hard was the struggle, and such the depression prevailing, that even so late as 1848 the inhabitants seriously entertained the project of abandoning the settlement for good. When the neighbouring colonies protested against the dregs of the population being landed on their shores from the mother country, Western Australia petitioned for them, and since the introduction of convict labour her position has vastly improved; but still the energy of the colonists has been fettered by the nature of the country and the small area of agricultural and pastoral land yet discovered. Western Australia is ill adapted to the extensive pursuit of agriculture, and, from the arid nature of the soil, the grasses are scantier and less succulent than in the eastern colonies, hence the quantity of wool at present exported is trifling when compared with the enormous weight annually yielded by her more favoured sisters. In 1852 Governor Fitzgerald wrote, "I fear that unless new grasses spring up, or are introduced into our pastures, we shall never be able to rival in this respect the production of the eastern

colonies. Our lands fit for sheep are so small in extent in proportion to the rest of the colony, that a limit will soon be arrived at unless better pastures be discovered. Should such exist, they probably lie far to the North-east."

South Australia was founded in 1836, and after the reverses always inseparable from the infancy of a settlement, she rapidly rose into a wealthy and populous colony. The land was found admirably adapted to the growth of cereals, and enormous mineral wealth—chiefly copper—was discovered within her bounds; but after a time the mines were found only to employ a certain number of hands, and the wheat-fields became impoverished from constantly bearing so exhaustive a crop. The South Australian statesmen were not slow to remark this, and immediately all their energy was devoted to the only remedy—the discovery of fresh lands towards the interior. Party after party went forth to struggle with the fearful difficulties of penetrating the desert regions to the north-east and north, and returned baffled yet not beaten. In spite of every obstacle, daring men persevered where success seemed impossible, and after repeated repulses the great end was achieved, and not only a road, but a telegraph-



line now stretches across the breadth of the entire Continent, from Adelaide to the northern sea-board. A volume would hardly suffice to chronicle the deeds of these intrepid explorers, and in the slight sketch which follows, it is only attempted to give a brief account of two or three of the most prominent amongst their number.

After Stuart had finally succeeded in opening out a route, and more particularly since the establishment of the telegraph-line, a new base was presented for western exploration, and both South and Western Australia threw themselves heart and soul into the task of opening out over-land communication. Dr. G. Neumayer, in a paper advocating the scientific exploration of Central Australia, read before the Royal Geographical Society on 8th June, 1868, says, "A glance at the map shows us what an immense tract of land is entirely unknown. Indeed, we might describe a circle in the portion lying to the west of Stuart's track, enclosing an area of half a million of square miles, of which our knowledge is absolutely *nil*. We should form a more adequate estimate of the fact, if we considered that this is at the same time the greatest absolute blank on the face of the globe—the polar regions excepted ;

as we know more even of that great tract of country on the African Continent which lies south of the equator and near the western coast. This 'Terra Australiensis incognita' is somewhat less than one-fifth of the entire Continent, and forms the western slope of what we are justified—according to all appearances—in terming the Great Interior Basin." This gentleman, speaking of Western Australia and the small settlements on the north-west coast, says, "It is not difficult to see that these colonies, separated as they are from their eastern sisters by a vast unknown territory, will have to struggle hard to make any progress; indeed, such progress is scarcely possible unless they extend their territory towards and across the water-shed of the interior basin, and unless overland communication be established between them and the other colonies." Dr. Neumayer had no doubt whatever that an exploration of that great blank on our map would materially assist, nay establish, such a communication—practicable at all seasons—for the mutual benefit of the colonies, and give thereby a fresh impetus to the spirit of enterprise in the country.

From the above remarks, which embody the opinion of most of the colonists, it will be seen

that an overland route from east to west would be of incalculable advantage to the inhabitants of both regions; South Australia has capital lying idle, and is longing for fresh fields on which to expend it; Western Australia is burning to break through the forbidding desert that impinges on her very gates, and cripples the energies of her sons.

In the discussion on the above paper, Sir Charles Nicholson drew the following conclusion from the expedition of Mr. Forrest towards the interior in 1869:—"That vast areas of the interior still remain untrodden by any European is an undoubted fact; an ample supply of data exists, however, enabling us to predicate with some degree of certainty as to the probable physical and geographical characteristics of the regions yet untraversed by civilized man; and there is little to justify any expectation that these will be found to differ in character from the inhospitable wilderness, from the confines of which so many enterprising travellers have been obliged to turn their steps, and on the borders of which not a few have perished. It may, I think, be reasonably assumed, that the whole interior region west of the 140th degree of east longitude,

and north of the 30th degree of south latitude, is of the most unpromising kind; that it is without rivers, without mountains, forming an inhospitable and dreary desert, similar to that traversed by Stuart, Sturt, Burke, Wills, and Mr. Forrest; and I cannot forbear expressing my conviction that, beyond the desirability of simply determining the fact—and all knowledge, even of a negative character is desirable—that there is little to tempt or repay an explorer in the desolate region included within the limits above mentioned. Portions—perhaps, not inconsiderable tracts—may be found along the coast, and extending for a few miles inland on the northern and western shores; but they will, I believe, be found to be a mere fringe, surrounding a widespread Sahara.” That the speaker formed a most correct estimate of the interior—as at present known—is undeniable; but, despite his forecast, we may venture to think that not until every means have been adopted to ascertain beyond the possibility of a doubt the non-existence of an overland route from east to west, should the attempt to gain that great end be abandoned. How little did Sturt, when baffled and impeded by the stony desert, dream of the country now laid open by Stuart lying a few

hundred miles before him! and may we not at least hope that endurance and energy will develop a similar belt connecting the east with the west? It is yet early in the day to predict the impossibility of such an achievement. Even at this moment, rumours of a successful journey from Western to Southern Australia have reached England. Ernest Giles has shown that the interior is not the blank wilderness that we have hitherto supposed, and who knows what future explorations may not bring forth? Let us hope for the best, and in the interim a brief account of the earliest attempts to pierce the western interior can scarcely fail to interest the reader.

CHAPTER II.

Eyre's journey along the shores of the Great Bight.

By the year 1840 both Perth and Adelaide were sufficiently advanced to contemplate an overland road between the two colonies.

A gentleman was then residing in South Australia, whose name had become known in the colony as a daring explorer, and whose tenacity of purpose and steadfastness in following up any undertaking to which he directed his thoughts, had already become widely known. This man was Edward John Eyre, the friend of Sturt, and the father of Western Australian exploration. The principal object hoped to be attained by the expedition was the opening a route by which stock could be transmitted from one colony to the other. During the previous year Mr. Eyre had carefully examined the country westward of the then settled districts, and convinced himself of the utter impracticability of

opening an overland route for stock in that direction. From his personal observation he inclined to break ground towards the north in preference to the west; hence, on the 23rd May, 1840, he wrote the following remarkable letter to the *South Australian Register*, in which his sagacity, and thorough knowledge of his subject are equally apparent:—"It may now therefore be a question for those who are interested in the sending an expedition overland to the Swan River, to consider what are likely to be the useful results from such a journey. In a geographical point of view it will be exceedingly interesting to know the character of the intervening country between this colony and theirs, and to unfold the secrets hidden by those lofty and singular cliffs at the head of the Great Bight, and so far, it might perhaps be practicable, since it is possible that a light party might, in a favourable season, force their way across; as regards the transit of stock, however, my own conviction is that it is quite impracticable. The vast extent of desert country to the westward, the scarcity of grass, the denseness of the scrub, and the all but total absence of water, even in the most favourable seasons, are in themselves sufficient bars to the transit of stock,

even to a distance we are already acquainted with; I would rather, therefore, turn the public attention to the northward, as being the most probable point from which discoveries of importance may be made, or such as are likely to prove beneficial to this and the other colonies, and from which it is possible the veil may be lifted from the still unknown and mysterious interior of this vast Continent."

Any suggestion emanating from such a man as Eyre was certain to be received by the colonists with respect, and the public attention, consequent on this letter, became centred in northern exploration. Feeling that this change in opinion was chiefly owing to himself, Mr. Eyre at once volunteered to lead a party into the interior. His offer was accepted, an exploration fund instituted, to which the inhabitants freely contributed, the Government furthering the undertaking by a grant of 100*l.*, and every assistance that lay within their power; and, to use Mr. Eyre's own words, "My arrangements proceeded rapidly and unremittingly, whilst the kindness of the Governor, the committee of colonists, my private friends, and the public generally, relieved me of many difficulties, and facilitated my preparations in a

manner that I could hardly have hoped or expected."

It will be seen from the above how early in its history South Australia lent its capital and its energy to the task of opening up the central portion of the Continent. That this public spirit is still extant, I think the sequel of this volume will show.

On the 18th of June the party, consisting of six Europeans and two black boys, started forth, accompanied for some distance by the Governor and most of the leading inhabitants. Mr. Eyre's intention was to examine Lake Torrens in the first place, and then to push northward; many and various were the conjectures then rife concerning the great interior. Some thought that a vast inland sea would be discovered, an Australian Mediterranean, by means of which communication could be established with the habitable belt fringing the Northern coast. A few desponding people were inclined to think the adventurers would encounter a huge salt-pan, lying white and glistening in the sun, and forbidding farther progress. Captain Sturt differed from both these opinions. I quote a speech made by him at the time. "With regard to an observation which he (Captain Sturt)

had made on Friday evening, regarding this Continent having been formerly an Archipelago, he stated that he was of opinion that a considerable space of barren land in all probability existed between this district and what had formerly been the next island. This space was likely to be barren, though of course it would be impossible to say how far it extended. He had every reason to believe, from what he had seen of the Australian Continent, that at some distance to the northward a large tract of barren country would be found, or perhaps a body of water, beyond which a good country would in all probability exist."

For months Mr. Eyre and his party struggled to penetrate northward; but in every direction Lake Torrens, overlapping them like a monster horseshoe, checked their progress. Owing to the extreme rarefaction of the atmosphere, everything wore a distorted aspect; what had from a distance appeared as rocks, turning on inspection into very small lumps of dirt or clay lying in the bed of the lake. The lake was penetrated for six miles, and so far found devoid of surface-water. It was nothing but a bed of mud, becoming softer and softer as the party advanced, which they perse-

vered in doing until the horses sinking in the slime up to their bellies rendered their return imperative. The whole of this surface of mud was covered with a coating of salt about one-eighth of an inch in thickness; a glittering belt, dazzling to the eye, but heart-breaking to the explorer. As further efforts in that direction would have been in vain, the party struck westward, and reached "Fowler's Bay," in the Great Bight. From this point they tried to push round the head of the Bight, being driven back twice from want of water, but in a third attempt Eyre was more successful, and managed to penetrate fifty miles along the coast beyond the northern point of the ocean. These repeated efforts had cost the expedition dear, for they lost their best horses, which rendered it impossible to carry provisions for so large a party. The leader was therefore reluctantly compelled to send some of their number back in the small Government cutter which had been placed at his disposal. During the absence of the little vessel Eyre meditated bitterly on the obstacles that had hitherto impeded his progress, and came to the desperate determination that on the return of the cutter with forage he would make his way round the Great Bight to Western Australia with pack-

horses only, a distance exceeding 1000 miles of trackless desert.

On the 26th January, 1841, the boat returned, having on board a favourite black boy of Mr. Eyre's, a native of King George's Sound, named Wylie. She also brought a letter from the Governor, informing him that the cutter could not be employed outside South Australian waters, though she was perfectly at his disposal within their limits. This was a bitter disappointment, and completely frustrated his plans. To take his already reduced party across the desert would now be impossible, for the horses could not carry food enough to support them. Only one means remained, and to this Mr. Eyre was compelled to resort, viz. to still further reduce his following. On the 31st January the cutter sailed, every man on board her watching with straining eyes the small party on the beach. With only one white companion the gallant leader had determined to traverse that fearful wilderness, "firmly determined never to return unsuccessful, but either to accomplish the object he had in view or to perish in the attempt," and now only waited the restoration of the horses to good condition, to sally forth into the desert.

In explaining his motives for the change in the

destination of his expedition, Mr. Eyre says,—
“It will be remembered, that in stating the origin and commencement of the northern expedition, it was remarked that a previously contemplated expedition to the westward was made to give way to it, and that I had myself been principally instrumental in changing the direction of public attention from the one to the other; it will be remembered also what publicity had been given to our departure, how great was the interest felt in the progress of our labours, and how sanguine were the expectations formed as to the results; alas, how signally had these hopes been dashed to the ground! After the toils, anxieties, and privations of eight months, neither useful nor valuable discoveries had been made; hemmed in by an impracticable desert, or the bed of an impassable lake, I had been baffled and defeated in every direction, and to have returned now would have been to have rendered of no avail the great expenses that had been incurred in the outfit of the expedition, to have thrown away the only opportunity presented to me of making some amends for past failure, and of endeavouring to justify the confidence that had been reposed in me, by carrying through the exploration which had been originally

again set out, every moment expecting to see a break in the line of cliffs along which they had now toiled so far. Alas! they still continued stretching as far as the eye could see to the westward, and as fast as they arrived at one point, it was but to be met with the view of another beyond. Thus hour after hour passed away, mile after mile was traversed, and yet no change was observable. By noon, 110 miles from the last water was reached, and still the country continued the same. The sheep still travelled, but were getting so tired, and their pace was so slow, that it was decided to leave them behind, and, by moving on more rapidly, endeavour to save the lives of their horses and themselves. Setting to work, Mr. Eyre and the boy made a strong enclosure of shrubs, in which they shut up the wretched sheep. A note was hastily written to the overseer, directing him to bury the loads of the horses, and hasten on with the animals alone. To attract attention a long stick, to which was attached a red handkerchief, was raised above the sheep-yard, and by one o'clock they were again pursuing their weary way, though much more rapidly than before. In a few miles they came to a well-beaten native road, and hopes were

raised that their sufferings would soon be at an end. It was not to be, for the rocky holes to which the track led were *dry*! They had now been four days without any water for their horses, their own scanty store was exhausted, and there appeared as little probability of their soon procuring it as there had been two days ago. At dark they had left the sheep-yard fifteen miles behind, and followed another native path, which, like its predecessor, led them only to dry holes in the rock. Staggering onward along the top of the cliffs, the wanderers found a new obstacle to impede their progress, for the country, which had hitherto been tolerably open, now became scrubby, and it was found impossible either to keep a straight course, or to make any way through it in the dark. Still they kept perseveringly onward, leading their horses, and forcing a passage as they best could. They were, however, soon compelled to desist. The black boy could hardly move; Eyre himself was but little better, and both were suffering from a parching thirst, so they laid down to wait for daylight. The boy, ignorant of the dangers which beset him, was soon sound asleep, but no soothing slumber visited the eyelids of the weary white man, whose own dis-

tresses were lost in the apprehensions which he entertained for those who were left behind. They were now 128 miles from the last water, whilst the horses had not had a drop for four whole days and nights, and had been almost without food also, for they could not feed on the parched and withered grass. The state the poor animals were in was truly pitiable: what, then, was likely to be the condition of those that were coming after and carrying heavy packs? A wretched vigil indeed must Eyre have kept that night, for he says, "It was clear, that unless I discovered water early in the morning, the whole of our horses must perish, whilst it would be very doubtful if we could succeed even in saving our own lives."

Early in the morning (March 11th) they moved on, and on reaching the edge of the cliffs noticed some sand-hills which they had passed the previous night, but had not seen owing to the darkness. The agonizing thought now occurred to the leader, that the water spoken of by the natives might be amongst these sand-hills, and that he was going away from instead of approaching it. The bare idea of such a possibility was almost maddening, and the brave man stood for a moment undecided, and irresolute what he ought to do. Should he

go back, the horses could never return if the sand-hills failed to yield the wished for supply. For a few minutes he carefully scanned the line of coast extended before him. In the distance was faintly discernible a low sandy shore, and Eyre made up his mind at once to advance. What self-possession and iron nerve must have been brought to bear on this momentous decision, I leave the reader to imagine. Seven miles brought them to a point where the cliffs receded from the sea-shore, and, as they inclined inland, left a low sandy country between them and some high, bare sand-hills near the sea. A native road led down to the sea-shore, and in a mile and a half from where they descended they reached the white sand-drifts. Upon turning into these to search for water, they were fortunate enough to strike the very place where the natives had dug little wells; "and thus," says Mr. Eyre himself, "on the fifth day of our sufferings, we were again blessed with abundance of water, nor could I help considering it as a special instance of the goodness of Providence, that we had passed the sandy valley in the dark, and had thereby been deterred from descending to examine the sand-hills it contained; had we done so, the extra fatigue to our horses and the great length of time it would

have taken up, would probably have prevented the horses from ever reaching the water we were now at." After a few hours of indispensable rest, Mr. Eyre and the boy hurried back to the relief of Baxter and his party, carrying a three-gallon keg of water. Without this timely succour the latter could never have survived; but at last they were all once more assembled together, and remained at the sand-hills a week, recruiting the horses, and recovering the stores that had been left behind by the overseer.

On the 18th March they set forward again, and by the evening of the following day had accomplished forty miles; but the desolate appearance of the country convincing Mr. Eyre that a long distance would have to be traversed before again reaching an oasis, he resolved to leave the baggage where it was, to send back the horses to the last water, rest them for two or three days, and then load them with as much of the precious element as they could carry. This was done; the whole party returned, except one. Edward Eyre remained alone in the desert to watch the sheep, with *six pints of water to last him as many days*. On examining the charts, he found that they had still 600 miles to traverse, measured in a straight

line, and, owing to circuits and inequalities, it would be impossible to accomplish this in less than 800 miles of distance, which would take eight weeks under the most favourable circumstances, most probably twelve when impediments were taken into consideration. For subsistence during this period they possessed three sheep and 142 pounds of flour, to be shared amongst five people, and the country was so indescribably wretched that no relief could be expected from roots or game. Can anything more horrible be conceived than the position in which Eyre now found himself, desolation all around him, the shore strewn with oars, planks, and fragments of wrecks, and no companionship but his own thoughts? Still, never for one moment did the idea of retreat present itself to his mind; during those days of thirst and solitude the indomitable will remained unbroken, and but one word rose to the parched lips, that word was, Onward. When the party rejoined him the six pints of water were exhausted, evaporation had robbed him of some, and once or twice he had spilled a little.

When seventy-two miles were made the sand-ridges became so harassing that it was necessary to still further lighten the loads of the horses.

The leader and Baxter therefore re-sorted all the baggage, throwing away every article that was not absolutely indispensable. All clothes, but a single spare shirt and pair of boots for each, were discarded; most of the pack-saddles, all the buckets but one, the medicines, some of the fire-arms, the ammunition, and last, most of the kegs for carrying water, besides a variety of other things, were here abandoned. Forward once more, the route lying by the sea-shore, where the drift sea-weed drove them into the loose heavy sand above high-water mark, and the utmost vigilance was requisite to prevent the thirsty horses from plunging their muzzles into the pitiless ocean and draining the salt draught of destruction. 102 miles from the last water and fifty still from the next. The Timor pony gave in, and had to be left to its fate. For five days the horses had been without water, and 112 miles of country had been traversed without the possibility of procuring food for them, other than the dry and sapless remains of last year's grass. Whenever the party halted they followed them about like dogs, looking to their masters only for aid, "and exhibiting that confidence in us which I trust we all reposed in the Almighty, for most truly did we feel, that in His mercy and pro-

tection alone our safety could now ever be hoped for."

Baxter, the overseer, though still performing his duty with cheerfulness and assiduity, unfortunately began at this crisis to entertain gloomy anticipations of the future. He doubted the existence of water ahead, and the possibility of saving the horses. But though his mind was constantly occupied with thoughts of returning, which he believed was the only means of saving their lives, he never gave way to despondency, but looked calmly to the future, considering and reasoning upon the plan it might be best to adopt. With respect to the black boys, they appeared to think or care but little about the future; insensible of their danger as long as there was anything left to eat or drink, they played, laughed, and joked with each other as much as ever. Everything was now abandoned except two guns, the keg with a little water, and a very small quantity of flour, tea, and sugar. Before many miles two of the horses gave in, and had to be left behind, and at nine in the evening of the 28th March, with feet inflamed by the salt water, the party came to a halt, when, as usual, the natives enjoyed an undisturbed repose, and the two Europeans had to

watch the horses by turns throughout the night. Morning dawned, the prospect was cheerless and gloomy, and they were 126 miles from the last water; their own scanty store was nearly exhausted and they were unable to afford any for breakfast. Travelling painfully onward, evening at length overtook them, their last and long husbanded drop of water was consumed, and the horses were turned out behind the nearest sand-ridge; completely worn out by the labours of the day, neither the leader nor the overseer were capable of watching them. At day-dawn Eyre was afoot, and endeavoured with a sponge to collect some of the dew which was hanging in spangles upon the grass and shrubs. When the sponge was saturated he squeezed it into a quart pot, and in an hour's time had filled the little vessel. The black boys had been employed in the same manner, using a handful of fine grass instead of a sponge, and their several collections united in one common stock were made into tea and divided amongst the whole party. When, if ever, would they again taste liquid? None knew.

The morning of March 30th was misty and the nature of the country could not be discerned. The cavalcade crept slowly along, and gradually the

landscape showed symptoms of a change, the chines and ridges near the sea were of pure white sand, whilst those farther back were high and covered with bushes. Upon ascending one of these, Eyre obtained a good view, and, to his inexpressible pleasure and relief, saw the high drifts of sand so anxiously looked for lying ahead of them at about five miles' distance. But even now, when the long-expected goal was in sight, it still seemed doubtful whether they could save the horses, for so great was the heat that a halt was imperative. In despair Eyre and Baxter looked around them to ascertain if no place was near where water might be procured by sinking. A hollow was selected between the two front ridges of white sand, and the boys called up to assist in digging. The suspense increased every moment as the well deepened, under the pliant hands of the natives. At five feet moisture commenced to show itself, and now the supreme moment had arrived, for, were it salt, their last hope of saving the horses was gone. It was tasted and pronounced fresh, but this intelligence was too joyful to be implicitly believed, and again and again the damp sand was subjected to the test, and in every instance the same verdict was returned. With

their hands, and with every available utensil, the boys now worked away; by sinking another foot the question was put beyond all doubt, fresh sweet water in abundance filled the well, and thus, on the seventh day of their distress, when hope itself seemed almost extinguished, their earnest prayers to God for assistance were heard; "And I trust," says Mr. Eyre in his diary, "that in our deliverance we recognized and acknowledged with sincerity and thankfulness His guiding and protecting hand."

The utmost caution was now necessary in ministering to the horses. They had been seven days deprived of any fluid, and though the poor beasts were suffering agonies, it was impossible to water them freely. Each animal therefore was given only four gallons then, and the same quantity later on. Gradually both men and beasts recovered from their trials, and by the 5th of April the overseer and one boy were ready to go back for the stores that had been abandoned forty-seven miles away. Mr. Eyre, thinking that they would have severe exercise, generously gave them almost all the food he had with him; consequently he and the two boys suffered severely from hunger, and were compelled to eke out their daily half-pound

of flour with pounded roots. In addition to starvation, they were deprived of sleep at night by the cold, for they were visited by severe frosts, and their clothing was of the scantiest. At last the overseer returned, with the boy and a single horse. His dismal tale was soon told. They had reached their destination on the 7th, but in returning one of the three horses became blind, and, with his load, had to be abandoned. A second horse had become unable to proceed, and both he and his load were left behind; but this happening only a few miles from the camp, both were eventually recovered.

Their position was now terrible indeed. They were still 650 miles from King George's Sound, with barely enough provisions to last three weeks, at a very reduced rate of allowance. Their cattle were so jaded that they could literally scarcely crawl, and it was evident they would be unable to move on again at all without many days of rest. By remaining in inactivity they were only consuming their provisions, and the idea of abandoning the horses could not even be entertained, for it had become evident that they must eventually have recourse to killing the poor animals for food. Another journey of 150 miles without water lay

before them, but an equally arid tract lay in their rear; and Mr. Eyre never once wavered in his opinion that to push on would be best. Baxter differed from him on this point. The last desperate march had produced a strong impression on his mind, and he could not divest himself of the idea that the farther they went to the westward the more arid the country would be found, and that eventually they should all perish from want of water. All arguments were useless, but with characteristic fidelity and obedience he readily acquiesced in any plan Mr. Eyre might decide upon adopting, and though he had just returned from a severe journey, volunteered for the important and pressing duty of recovering the stores which had been left behind. This, however, the leader determined to undertake himself; and, accompanied by a black boy, set out on foot; and in four days they returned, bringing on their backs such stores as were absolutely necessary. During their absence Baxter had examined the country ahead, and seemed quite discouraged at its appearance. Some fish that they had speared disagreed with the whole party, and a horse was killed for food, on which they fed until it became quite putrid, and both the Europeans were seized

with violent dysentery. During their helplessness the two elder native boys stole the provisions and showed signs of disaffection, threatening to leave. In vain Mr. Eyre attempted to reason with them, they could not understand the food being economized; and at last, after breakfast on the 22nd April, they took up the spears they had been preparing for the last two days, and walked sulkily from the camp in a westerly direction. The youngest boy would have followed, but as he was too young to know what he was doing, the leader detained him. In three days the runaways turned up again and begged to be received, as they found they could get nothing to eat for themselves. The King George's Sound native expressed sorrow, but the other one sat silently and sullenly at the fire.

On April 27th, after nearly a month spent in trying to restore the horses, the camp was broken up, and the party once more proceeded, knowing that they had at least 150 miles to traverse before they could again hope to meet water. On the 29th Mr. Eyre intended to have travelled all night, to make up for a compulsory halt during the day; but as the weather looked rainy, and the ground was well adapted to catch any water that might fall, the overseer earnestly begged him to

stop, and, in opposition to his own judgment, he yielded. It was blowing a gale, and the horses having been hobbled and turned out to feed, the whole party proceeded to make break-winds of boughs before lying down for the night. The overseer asked Mr. Eyre which watch he would prefer, and, not feeling sleepy, he chose the first. At a little before six he went to look after the horses, having previously seen Baxter and the natives reposing, each at their respective break-wind, ten or a dozen yards apart from one another. The arms and provisions, as was customary, were piled up under an oilskin between the leader's break-wind and that of the overseer, with the exception of one gun, which was always kept by Mr. Eyre's sleeping-place. This minute detail is necessary, because of the fearful consequences that followed.

The night was cold, and the horses fed tolerably well, but rambled a good deal, treading in and out among the belts of scrub, until the leader, who was following them, hardly knew in which quarter the camp lay. At half-past ten he headed them back, as he thought, in the right direction, to be ready to call the overseer, whose watch commenced at eleven. Whilst looking steadfastly round among

the scrub to see if he could anywhere detect the embers of the fire, Mr. Eyre was startled by a sudden flash, followed by the report of a gun, not a quarter of a mile away. Thinking that the overseer had mistaken the hour of the night, and had taken that method of attracting his attention, he hurried towards the camp, and at about a hundred yards from it, he met the King George's Sound boy (Wylie), who was running in great alarm and crying out, "Oh, massa, oh, massa, come here!" In a few bounds the camp was reached, and there, weltering in his blood and in the last agonies of death, the leader found his faithful friend and companion Baxter.

Upon raising the body, the unfortunate man was found beyond all human aid; a ball had penetrated his left breast, and but few minutes elapsed before he expired in Mr. Eyre's arms. Then as he gazed speechless on the familiar face, now still for ever, the awful, the appalling truth burst upon the survivor, that he was alone in the desert. The faithful being who had for so many years followed his fortunes, and whose attachment had induced him to enter on the fatal journey, now lay cold and rigid at his feet. Small wonder that as this rushed tumultuously through his brain, the

strong man felt for a few instants a wish to change places with the murdered form before him. The horrors of his situation glared upon him in such startling reality, as for an instant almost to paralyze the mind. At the dead hour of night, in the wildest and most inhospitable wastes of Australia, with the fierce wind raging in unison with the awful scene before him, Eyre was left with a single native, whose fidelity he could not rely on, and who for aught he knew might be in league with the other two, who perhaps were even then lurking about to take away his life, as they had done that of his follower. It was three days since they had left the last water, and it was very doubtful where any more would be found. Six hundred miles had to be traversed before he could hope to obtain the slightest aid or assistance, whilst he knew not if a single drop of water or an ounce of flour had been left by the murderers, from a stock that had previously been so small. Rarely indeed has a human being had to face a more terrible position.

On searching for his double-barrelled gun its place was found empty, and a similar weapon that had belonged to the overseer was gone. These were the only arms at the time in a serviceable

condition, for though there were a brace of pistols, cartridges were absent, and Mr. Eyre's rifle had become useless from a ball sticking fast in the breech, which he had in vain endeavoured to extract. A few days previous to their leaving the last water, the overseer had attempted to wash out the rifle, not knowing it was loaded, and the powder being wetted, it could neither be fired off, nor the ball got out. A small canvas bag containing a little ammunition, which had been overlooked by the murderers in their hurry, was at length found, and, retaining possession of this, Eyre rushed away from the fearful scene, accompanied by Wylie, to search for the horses, knowing that if they got away now, no chance whatever would remain of saving their lives. With great difficulty they were found, for the wretched animals had wandered to a considerable distance, and both men remained watching them during the remainder of the night. Mr. Eyre thus describes it:—"Every moment appeared to be protracted to an hour, and it seemed as if the daylight would never appear. About midnight the wind ceased, and the weather became bitterly cold and frosty. I had nothing on but a shirt and a pair of trousers, and suffered most acutely

from the cold ; to mental anguish was now added intense bodily pain. Suffering and distress had well-nigh overwhelmed me, and life seemed hardly worth the effort necessary to prolong it. Ages can never efface the horrors of this single night, nor would the wealth of the world ever tempt me to go through similar ones again."

Daylight at length dawned, and on driving the horses back to the camp, a sad and heart-rending scene presented itself. The corpse of the murdered man lay extended on the ground, with the eyes open, but cold and glazed ; whilst the same stern resolution, and fearless open look, which had characterized him when living, stamped the expression of his countenance in death. He had fallen upon his breast four or five yards from where he had been sleeping, and was dressed only in his shirt. In all probability, the noise made by the natives in plundering the camp, had awaked him, and upon his jumping up with a view of stopping them, they had fired upon and killed him.

All around lay scattered the harness of the horses, and the remains of the stores that had been the temptation to the bloody deed. On examination, the miscreants were found to have

carried off the whole of the baked bread, amounting to twenty pounds in weight, some mutton, tea and sugar, the overseer's pipes and tobacco, a keg full of water, some clothes, two guns, with nearly all the ammunition, and a few other small articles. There were still left forty pounds of flour, a little tea and sugar, and four gallons of water. Everything but the bare necessities of life had now to be abandoned, and, whilst a little bread was cooking, Eyre attempted to put the rifle—his only serviceable weapon—in order. Unable to extract the ball, he resolved to melt it out, and for that purpose took the barrel off the stock, and put the breech in the fire, holding the muzzle in his hand. Buried in agonizing thought, he was rudely recalled to himself by the explosion of the charge, and the whiz of the bullet as it just cleared his head. The escape was miraculous; but the gun was once more fit for use, and, carefully loading it, Mr. Eyre felt a comparative degree of confidence and security, to which he had hitherto been a stranger.

At last the horses had received their slender burdens, and nothing remained, before proceeding, but to perform the last sad offices of humanity towards him whose career had been cut short in

so untimely a manner. Even this duty was rendered more than ordinarily painful by the nature of the country, one vast unbroken surface of sheet rock extending in every direction, and precluding the possibility of making a grave. The survivor could therefore only wrap a blanket round the body of his comrade, and, leaving it enshrouded where it fell, escape from the melancholy scene, accompanied by Wylie.

For all that day they travelled slowly and silently onward, the boy preceding, leading one of the horses, Eyre following behind, and driving the others. In the afternoon the attention of the leader was called by Wylie to two white objects advancing towards them, which he at once recognized as the native boys, covered with their blankets only. The horrors of the situation were now multiplied, for their lives could at any moment be attempted by the murderers in the thick scrub or during the night. With these bloodhounds on their trail safety was at an end, for, with their usual improvidence, the natives would soon devour the stolen provisions, and would then resort to another murder to possess themselves of the remainder. But one resource was left to the leader by which he might hope to save his own

life and that of the black boy with him, viz. to shoot the elder of the two, if they still persisted in following. He halted, and endeavoured to enter into parley with them, with a view to persuading them to return eastward, and thus obviate the necessity of taking away the life of the elder, but they carefully avoided all close contact, calling out incessantly to Wylie to come and join them. Time was too precious to be wasted in vain attempts to reason with the murderers, so Eyre pushed on according to the system of march he had adopted in the morning. When the natives saw this, and found that Wylie would not desert his master, they set up a wild and plaintive cry, still following in the brush parallel to the line of route, and never ceasing in their importunities, until the denseness of the scrub, and the closing in of night, concealed one party from the other. Eyre now resolved to make a night march and outstrip the miscreants who were dogging his footsteps, and in this he was completely successful, for, laden with the stolen bread and water, they could never have kept up, and most likely camped soon after sundown. Day after day he urged the jaded horses onward, and finally, on the seventh day since leaving the last depôt, they again found

water, after having crossed 150 miles of a rocky, barren, and inhospitable table-land.

Having now got fairly beyond all the cliffs bounding the Great Bight, the intrepid leader trusted that the greatest difficulties were overcome. The vegetation of the country had undergone a decided change. Banksias abounded, and the tracks of natives were numerous, though they kept themselves concealed. It was to be hoped that no more fearful stages of 150 miles without water would occur, but that they would be enabled to procure it once at least in every forty or fifty miles, if not oftener. A strict watch was kept in case the two boys should reappear, but they were never seen again, and there seems no doubt whatever that they perished. At the time Mr. Eyre last saw them they were sixty-three miles from the nearest water to the eastward, and eighty-seven from the sand-ridges where he was now camped. The stolen property would retard their progress, and they would doubtless have consumed the keg of water they carried with them, when they found its weight inconvenient, without the slightest regard for the wants of the morrow. Then difficulties and distress would gradually but certainly increase upon them ; they would fling away their guns and

bread ; and thus left in that awful desert, unarmed, and devoid of both food and water, a dreadful and lingering death would terminate their existence, their last moments embittered by the consciousness that their fearful condition was entirely owing to their own treachery. Mr. Eyre, on calm reflection, finds some extenuation for the boys. After all they were but savages, and the unlucky opinions regarding the future, openly expressed by Baxter, doubtless had a depressing effect upon them. Probably the thought of murder had never entered their minds, and only when the ill-fated overseer awoke and found them engaged in rifling the stores, did such a method of securing their retreat flash upon them, unfortunately to be acted upon with fatal promptitude. The boys were old servants of Eyre's, the elder having been with him two years and a half, the younger more than four years, and that either of them should have planned a wilful, barbarous, and cold-blooded murder, is hardly to be believed, more particularly as no object was to be attained by it. The body of the murdered man having been shot through the chest, many yards in advance of where he was sleeping, showed that not until he had arisen from his resting-place, and advanced towards them, was

the fatal shot fired. This of course is at the best but surmise, though it indicates clearly a love of justice in the breast of the leader thus treacherously abandoned, and a repugnance to condemn even an Australian black unheard.

From the 7th of May to the end of that month, the wanderers struggled westward, meeting with water more frequently, but becoming daily weaker and more emaciated. Horse-flesh, an occasional kangaroo, and fish were their sole food, which produced excruciating pains in the white man, and little less suffering to the black, from the reckless way in which he gorged himself. Some idea of a native's appetite may be gathered from the following extract:—"May 18th. Having seen some large kangaroos near our camp, I sent Wylie with the rifle to try and get one. At dark he returned, bringing home a young one, large enough for two good meals; upon this we feasted all night, and for once Wylie admitted that his belly was full. He commenced by eating a pound and a half of horse-flesh, and a little bread; he then ate the entrails, paunch, liver, lights, tail, and two hind legs of the young kangaroo, next followed a penguin, that he had found dead upon the beach, upon this he forced down the whole of the hide of the

kangaroo, after singeing the hair off, and wound up this meal by swallowing the tough skin of the penguin; he then made a little fire, and laid down to sleep and dream of the pleasures of eating, nor do I think he was ever happier in his life than at that moment." Mr. Eyre also tells the following curious anecdote, which illustrates admirably the character of the blacks :—" During the day Wylie had caught two opossums, and as these were entirely the fruit of his own labour and skill, I did not interfere in their disposal. I was curious, moreover, to see how far I could rely upon his kindness and generosity, should circumstances ever compel me to depend upon him for a share of what he might procure. At night, therefore, I sat philosophically watching him whilst he proceeded to get supper ready, as yet ignorant whether I was to partake of it or not. After selecting the larger of the two animals, he prepared and cooked it, and then put away the other where he intended to sleep. I now saw that he had not the remotest intention of giving any to me, and asked him what he intended to do with the other one. He replied that he should be hungry in the morning, and meant to keep it until then. Upon hearing this, I told him that his

arrangements were very good, and that for the future I would follow the same system also; and that each should depend upon his own exertions in procuring food; hinting to him that as he was so much more skilful than I was, and as we had so very little flour left, I should be obliged to reserve this entirely for myself, but that I hoped he would have no difficulty in procuring as much food as he required. I was then about to open the flour-bag and take a little out for my supper, when he became alarmed at the idea of getting no more, and stopped me, offering the other opossum, and volunteering to cook it properly for me. Trifling as this little occurrence was, it read me a lesson of caution, and taught me what value was to be placed upon the assistance or kindness of my companion, should circumstances ever place me in a situation to be dependent upon him. I felt a little hurt, too, at experiencing so little consideration from one whom I had treated with the greatest kindness, and who had been clothed and fed upon my bounty for the last fifteen months."

On the last day of May, Mr. Eyre had a narrow escape of broken bones from a horse jumping upon him, when he would have been in a dreadful position, and in all probability must have perished.

On the 2nd of June they saw two black objects to seaward, and made them out, after much anxious watching, to be whale-boats. Feeling sure that the vessel to which they belonged must be somewhere in the neighbourhood, the horizon was keenly scanned in every direction, and at last they were delighted beyond measure to perceive to the westward the masts of a large ship peeping above a rocky island which had heretofore concealed her from their view. The poor black boy's joy now knew no bounds, and he leapt with delight at the prospect of plenty to eat. Mr. Eyre's chief fear was lest she should disappear before they could get to her, or attract the attention of those on board. Mounting the strongest horse, he pushed on by himself as fast as the heavy nature of the ground would permit, leaving Wylie to bring on the other animals. A short time brought him to a rocky bay, opposite to which lay at anchor a fine barque, less than a quarter of a mile from the shore. The people on board were busy, and did not at first perceive the wanderer, but on his making a smoke and hailing, a boat was instantly put off, and in a few moments he had the inexpressible pleasure of being again among civilized beings, and of shaking hands with

a fellow-countryman in the person of Captain Rossiter, commanding the French whaler "Mississippi," by whom they were both received with the greatest kindness and hospitality.

For a fortnight Mr. Eyre and Wylie remained on board the friendly vessel, the latter not a little amusing her crew by his capacity for eating, with the exception of his first meal, when the immense number of biscuits he devoured, and the marvellous rapidity with which they disappeared, not only astounded, but absolutely alarmed them. During the whole of this time the weather was so boisterous, cold, and wet, that with the scanty clothing remaining to them, they could never have lived through it. It seemed indeed as though a kind Providence had sent the weary men shelter when exposure would have carried with it death. The French blacksmith shod the horses, and Captain Rossiter supplied everything that was wanted to continue the journey. Nothing seems to have been more kind than this gentleman's behaviour; he would receive no payment for the twelve days his visitors had resided on board, and pressed many articles of warm clothing and other little comforts on Mr. Eyre and his follower. Into the remaining portion of this eventful journey I shall

not enter. Rain now fell heavily, and both men and horses suffered dreadfully from cold and rheumatism. On the 7th July, amidst pouring rain, they ascended the hill that overlooks the town of Albany. Not a living creature was in sight—not even an animal—the place looked uninhabited, so completely had the inclemency of the weather cleared the streets. Mr. Eyre could not but recall the party as more than a year before it had set out, with horses, drays, and well-ordered appointments. Two poor wanderers on foot only had reached the goal, and a tear to the memory of those lost arose to his eye.

Such is briefly an account of the first attempt to pierce the centre of Australia, and to open up communication between the western colony and her southern sister. The account from beginning to end relates to nothing but a miserable, arid, desolate region, where, as we have seen, even a native perishes from thirst and starvation. Throughout the whole length of the Great Bight not even the most paltry rivulet discharges itself into the sea. Desolation reigns supreme. Mr. Eyre, however, by his indomitable pluck, cleared up one point most satisfactorily, viz. that if the pastoral interests of South and Western Australia

made a land communication absolutely necessary, it was in vain to look for it on the borders of the Great Bight. He had been foiled in attempting to penetrate the interior; beyond vague conjectures nothing concerning this enormous tract was known, and if a road was to be opened, it became manifest that the mystery enveloping Central Australia should be cleared up. How this was partially done will be shown in the following chapter.

CHAPTER III.

Early explorations continued.—Discovery of Victoria River.—
Captain Sturt's journey.

IN the meanwhile the work of exploration had been progressing in the north. H.M. surveying ship "Beagle" discovered at the head of King's Sound a fine fresh-water river, named the Fitzroy, and her boats traced its course for some twenty miles, returning only when their farther progress was stopped by clusters of islands and débris, which choked the channel. Soon afterwards the officers of the same vessel, while examining the coast between Melville Island and the mainland, found another river of considerable size named the Adelaide. At the head of Queen's Channel the features of the coast gave promise of inland waters, and a party were despatched to verify this. Captain Stokes, then a lieutenant in the "Beagle," thus describes the excursion:—"Our preparations

were rapidly made, a few days' provisions were stowed away in the boat, and as the western sky glowed red in the expiring light of day, the gig was running before a north-west breeze, for the chasm in the distant highland, bearing S. 20 E. twelve miles from the ship. As we advanced, the separations in the range became more marked and distinct, as long as the light served us, but presently darkness wrapped all in impenetrable mystery. Still we ran on, keeping close to the eastern lowland, and just as we found that the course we held no longer appeared to follow the direction of the channel, out burst the moon above the hills in all its glory, shedding a silvery stream of light upon the water, and revealing to our anxious eyes the long-looked-for river, rippling and swelling, as it forced its way between high rocky ranges. Under any circumstances the discovery would have been delightful, but the time, the previous darkness, the moon rising and spreading the whole before us like a panorama, made the scene so unusually exciting, that I forbear any attempt to describe the mingled emotions of that moment of triumph. As we ran in between the frowning heights, the lead gave a depth of eighteen and twenty fathoms, the velocity of the

stream at the same time clearly showing how large a body of water was pouring through. 'This is indeed a noble river!' burst from several lips at the same moment. 'And worthy,' continued I, 'of being honoured with the name of her most gracious Majesty the Queen:' which Captain Wickham fully concurred in, by at once bestowing upon it the name of Victoria River." The vessel herself ascended fifty miles up this fine stream, while boat expeditions went considerably farther. Captain Stokes considered that they had neither over-rated its importance, nor acted hastily in calling it the Victoria, and he compares it in importance to the Murray. That its discovery gave rise to great excitement is undoubted, all who upheld the theory of an inland sea fondly imagining that this was the channel by which its drainage reached the ocean. We shall arrive at the real character of the newly-found river when the course of this narrative brings us to Mr. Gregory's explorations. Several other streams were discovered by the officers of the "Beagle," amongst them the Flinders and the Albert in the Gulf of Carpentaria, both of which lie too far eastward to claim any description in this volume.

The reader will see that hitherto exploration

had tended rather to increase the mystery in which the interior was wrapt than to throw any definite light upon the subject. Eyre had proved that for 1500 miles no inland waters mingled with the southern ocean. From the very beach perpendicular and inaccessible precipices rose upward, as if to bar out the rash intruder. Where at intervals this barrier receded, the thirsty desert rushed in to fill up the gap. The Murray and Darling rivers, though draining the whole of the south-eastern portion of the continent, were not in their whole course joined by any one stream coming from the west or the north-west. Yet that country must have some outlet for its waters other than evaporation. Where could such outlet be? This was the question that Australians were day by day more anxious to solve. For fourteen years Charles Sturt had been reposing after his splendid discoveries. Now once again he buckled on his harness, and set forth resolute to conquer. His theory regarding the interior will be best conveyed by quoting his own words, nor need we have any scruple in laying before the reader the speculations of all these eminent men regarding the dismal wilderness they so nobly essayed to pierce—speculations which, though now proved to have

been in many cases erroneous, must still possess much interest both for the geologist and for the general public. "I had adopted an impression," says Captain Sturt, "that this immense tract of land had formerly been an archipelago of islands, and that the apparently boundless plains into which I had descended on my former expeditions were, or rather had been, the sea-beds of the channels which at that time separated one island from the other. It was impossible, indeed, to traverse them as I had done and not feel convinced that they had at one period or the other been covered by the waters of the sea. It naturally struck me that, if I was correct in this conjecture, the difficulty or facility with which the interior might be penetrated would entirely depend on the breadth and extent of these once submarine plains, which in such case would now separate the available parts of the continent from each other, as when covered with water they formerly separated the islands. This hypothesis, if I may so call it, was based on observations which, however erroneous they may appear to be, were made with an earnest desire on my part to throw some light on the apparently anomalous structure of the Australian interior. No one could have watched

the changes of the country through which he passed with more attention than did I—not only from a natural curiosity, but from an anxious desire to acquit myself to the satisfaction of the Government by which I was employed.”

In the month of August, 1844, Captain Sturt and his party left Adelaide, consisting of 18 men, including the leader and two natives, 11 horses, 30 bullocks, 200 sheep, and 6 dogs, besides drays and a boat. They proceeded up the Murray and Darling rivers as far as some water-holes called Laidley Ponds, and then struck across to the north-west for the Barrier Ranges, where the leader hoped to find some practicable means of gaining the interior. On the 28th of December, after great hardship, the summit of the Barrier Range was reached. If this had been of any great extent, it should have thrown off some rivers running in a northerly direction—nay, the Victoria itself might rise amongst these rugged hills. But no such welcome sight greeted the eyes of the wanderers. The dark and unbroken line of the range lay to the south; to the eastward were hills that had already been visited; whilst from the south-west round to the east northwards, the whole face of the country was covered with a gloomy scrub

that extended to the very horizon. Leaving the main body of his party camped on a fast-failing creek, Sturt with three men pushed to the northward. Some flat-topped hills appeared and were visited. Their geological formation was perfectly new, being composed of indurated or compact quartz; neither did they resemble in character ranges, properly so called, but were a group of flat-topped hills, similar to those figured by Flinders and other navigators. Some were altogether detached from the main group, not more than two-thirds of a mile in length, with less than a third of that breadth, and an elevation of between three and four hundred feet. These detached hills were perfectly level at the top, and their sides declined at an angle of 54° . The main group appeared to consist of a number of projecting points, connected by semicircular sweeps of greater or less depth. There was no vegetation on the sides either of the detached hills or of the projecting points, but they consisted of a compact white quartz, that had been split by solar heat into innumerable fragments in the form of parallelograms. Vast heaps of these laid at the base of the hills, and formed a great resemblance to a town ruined by an earthquake. On proceeding, Sturt

and his companions found themselves in a perfect desert. At first the scrub was broken at intervals by sandy flats, but soon the formation changed, and the sand-ridges succeeded each other like waves of the sea; no sooner had they descended one than they were ascending another, and the heat between them was fearful. Hitherto grass had been abundant, now not a blade could be seen; no vegetation but the dreadful spinifex, through which they found difficulty in forcing their way, and some bushes of acacia, cassia, casuarina, &c., which had leaves only at the termination of their upper branches, the under-leaves having dropped off, withered by the intensity of the heat. On attaining the summit of a small eminence a vast extent of desolation without any break met the view, nor was there the slightest indication of a change in the country.

To attempt to go farther in that direction would have been folly, and the explorer resolved on returning to his main camp. Had any hills broken the gloomy horizon, he would have held his course; none such presented itself, and he was fain to retrace his steps. This must have been the more bitter to him, as he thought that they

could not be very far from the outskirts of an inland sea, so closely did the wretched country resemble a low and barren sea-coast.

On returning, Captain Sturt was hailed with the good news that an ample supply of water had been found by Mr. Poole, the second in command, in a rocky glen near their present camp, and to this they at once removed. The *Depôt*, as their new site was termed, was established on the 27th January, 1845, and their tents were not again struck until the 17th July following. The reader will doubtless wonder at so prolonged a period of inactivity, but his astonishment will increase when he learns its cause—Sturt, his men, his cattle, and his horses, were prisoners, confined to that lonely glen by an agency more powerful by far than any bolts or bars forged by human hands. It was long before the leader could bring himself to realize the misfortune that had overtaken his party, and not until every creek in the neighbourhood had been run down, and the country searched carefully in all directions, did the truth flash across his mind that they were locked up in that desolate and heated region as effectually as though they had wintered at the Pole. In whatever quarter they sought egress the same insurmountable bar-

rier presented itself—the total absence of water. What would have been their fate had not Providence conducted them to this one oasis in the howling wilderness that surrounded them seems too horrible to contemplate. That they would have perished, both men and cattle, is undoubted; perished, and by that most fearful of deaths—thirst. The depôt was shaded by large trees and by high cliffs, notwithstanding which the party suffered terribly from the intense heat. The mean of the thermometer for the months of December, January, and February was 101° , 104° , and 101° respectively in the shade. Under its effects every screw in their boxes had been drawn, and the horn handles of their instruments, as well as their combs, were split into fine laminæ. The lead dropped out of their pencils, owing to the shrinking of the wood; the signal-rockets, a most valuable item in the equipment of the expedition, were entirely spoiled; their hair, as well as the wool on the sheep, ceased to grow, and their nails became brittle as glass. Nor was personal inconvenience all the mischief wrought by this fiery atmosphere, for it was found to reduce the provisions alarmingly. The flour lost more than eight per cent. of its original weight; the bran in

which their store of bacon was packed became perfectly saturated, and weighed almost as heavy as the meat; they were obliged to bury their wax candles, to save them from running into a shapeless mass; even a bottle of citric acid became liquid, and, escaping, burnt some linen; whilst it was with the utmost difficulty that they could either write or paint, so rapidly did the fluid dry in the pens and brushes. During the whole of this trying period the leading members of the expedition never ceased in their attempts to find some means of escaping from this oven. To east, west, north, and south they rode, the heated stirrup-irons blistering their feet, and the horses reeking with perspiration though never put beyond a walk. At last Captain Sturt was seized with violent headaches, pains in the joints, a coppery taste in the mouth, and sponginess of the gums—scurvy had attacked him, and both Mr. Poole, the second in command, and Mr. Browne, the doctor, were also suffering from this dread disease. What care was displayed for the men under their command by these gallant gentlemen may be gathered from the fact that the officers alone were stricken. The men lived on fresh mutton, and were in comparative idleness; the

officers were exposed without respite, and whilst absent their only diet was salt bacon.

On the 11th of May a most curious incident occurred. During the afternoon Captain Sturt was aroused by the dogs springing up simultaneously and rushing across the creek, their continued barking indicating that they had brought something to bay. It was soon discovered that their quarry was a solitary native, who contended manfully against his formidable antagonists. The dogs were called off and the wanderer conducted to the camp, where, after drinking copiously and eating ravenously, he coiled himself up in a blanket and went to sleep. He was an elderly man, dreadfully emaciated, and half dead from hunger and thirst. Where this desert waif arrived from, why he was thus alone, without companion, kith, or kin, the explorers were unable to divine. His whole behaviour was surprising, for he exhibited no curiosity at the novelties by which he was surrounded, but remained calm and self-possessed, as though determined not to be betrayed into the slightest display of fear or timidity. After a few days he became quite communicative; and now comes the most extraordinary part of this episode. On

seeing the boat, he appeared perfectly aware of its use, intimating that it was turned upside down, and pointing to the *north-west as the quarter in which she should be used*. He mistook the net in which the sheep were penned for a fishing-net, and explained that in those waters were found fish so large that they would be unable to escape through the meshes. It appeared to Captain Sturt quite clear that he was aware of the existence of a large expanse of water somewhere or other to the northward and westward, for he conveyed that waves higher than his head broke upon the shore, and recognized several of the sea-fish figured in Cuvier's works, as well as the turtle. He expressed his readiness to accompany the expedition when rain fell, though this, he intimated, would not be for some time. No wonder the leader was elated at this unexpected confirmation of his surmises, and that he longed more than ever for the rain which would unlock his prison doors. At the end of a fortnight the old black—who had been fed on crows, which he preferred to mutton, and had picked up wonderfully in condition—left the camp, with the promise of returning speedily; and from the careful way in which he concealed the different little articles that

had been presented to him, there seemed every reason to suppose he would have done so; but he was never seen again, and Captain Sturt thinks that the poor old fellow perished from want of water in endeavouring to return to his kindred.

The leader's journal vividly describes their position after his departure. "With him all our hopes vanished, for even the presence of that savage was soothing to us, and so long as he remained we indulged in anticipations as to the future. From the time of his departure a gloomy silence pervaded the camp. We were indeed placed under the most trying circumstances—everything combined to depress our spirits and exhaust our patience. We had gradually been deserted by every beast of the field and every fowl of the air. We had witnessed migration after migration of the feathered tribes to that point to which we were so anxious to push our way. Flights of cockatoos, of parrots, of pigeons, and of bitterns, birds also whose notes had cheered us in the wilderness, all had taken the same high-road to a better and more hospitable region. The vegetable kingdom was at a stand, and there was nothing either to engage the attention or attract the eye. Our animals had laid the ground bare for miles

around the camp, and never came towards it but to drink. The axe had made a broad gap in the line of gum-trees which ornamented the creek, and had destroyed its appearance. We had to witness the gradual and fearful diminution of the water, on the possession of which our lives depended. Day after day we saw it sink lower and lower, dissipated alike by the sun and the winds. From its original depth of nine feet it now scarcely measured two, and instead of extending from bank to bank, it occupied only a narrow line in the centre of the channel. Had the drought continued for a month longer than it pleased the Almighty to terminate it, that creek would have been as dry as the desert on either side."

Meanwhile Mr. Poole was getting weaker and weaker, and suffering greatly. Except to visit him, Captain Sturt and Mr. Browne now rarely left their tents. During May and June there was no indication of a break in the weather, though it had been bitterly cold during parts of that period, the thermometer descending to 24°. At last, on the 12th of July, the wind veered from east to north, and at noon a gentle rain set in. It had been decided that Mr. Poole should be sent back, and on the 14th, the day appointed to carry him,

he was able to move. The parting between the companions was very painful, and the poor invalid wept bitterly at the last moment. On the evening of the 17th the man who had been told off to look after Mr. Poole, came into camp with the sad news of his death. The body was brought back to the depôt and buried under a grevillia tree; the initials J. P. and the year 1845 alone mark the lonely spot where the explorer is at rest.

Mr. Piesse and two men were sent back to the civilized districts with despatches, and the leader, with his now reduced party, pushed on sixty miles in a north-west direction and established another depôt, named Fort Grey. A more westerly direction was now taken, and after crossing a most desolate country, with sand-ridges that resembled lines of dead brick walls, further progress was checked by an immense shallow and sandy basin, dry immediately opposite to the party, but containing broad sheets of water both to the southward and northward, of a deep indigo hue, and as salt as brine. This was a portion of the everlasting Lake Torrens, that had baffled Mr. Eyre, but Captain Sturt was to the north-east of it, and escaped being shut in by its horse-shoe

bend. By the temperature of boiling water here the surface of the lake was shown to be below sea-level, so none of its drainage can flow into the southern ocean.

Determined to make a bold push for the interior, Captain Sturt returned to Fort Grey, and made preparations to set out, accompanied only by Mr. Browne and three men; for he had satisfied himself that from the nature of the country, to venture into it with the whole party, would be in the highest degree imprudent. The position of Fort Grey was lat. 29° south, and long. 141° east, and by steering north-west he trusted to gain the 138th meridian about the centre of the continent, and felt sure that if there were any mountain chains or ranges of hills to the westward, connected with the north-east angle of the continent, he would by this route discover them. On the 14th of August the little party started, carrying fifteen weeks' provisions; the men at the dépôt had made a strong stockade, in case of an attack by the natives, and the last order given by the leader was that the boat should be thoroughly repaired, and a good coat of paint given her, in case her services should be required. At first the country was very bad, though better than it had

been in the immediate neighbourhood of Lake Torrens, but gradually it assumed a more cheerful aspect, box-trees appearing with grass growing under their shade. The spirits of the party rose proportionately, and the leader and Mr. Browne even ventured to indulge in pleasing anticipations. Suddenly their hopes were annihilated, for before them rose a wall of sand, lying directly across their course, and over which they had to toil for twenty miles, each ridge assuming a steeper and more difficult character. Upon ascending an eminence to view the country, the prospect was most disheartening. An immense plain stretched from the south round to the eastward of north, and upon this abutted and terminated sand-ridges such as they had just traversed, like so many headlands running into the ocean; for from the point on which they stood, the dark purple waste appeared perfectly level. A line of low trees stood far away towards the north-east, otherwise the plain was devoid of vegetation, and its horizon was like that of the ocean. Towards the point the leader wished to proceed, nothing was to be seen but this stone-clad plain, forbidding, arid, and boundless. Undeterred by the desolation before him, Sturt boldly entered this wilderness

on the 26th, and travelled twenty miles into it before halting. A closer inspection proved it to be undulating, with shining hollows in which it appeared water sometimes collected. The ground was covered so thickly with stones as to exclude all vegetation, and the stones themselves were peculiar, ranging from one to six inches in length, rounded by attrition, and coated with oxide of iron. In going over this dreary waste the iron-shod hoof of the horses left no track, and that of the cart was only visible at intervals. From the spot on which the adventurous men camped, no object of any kind broke the line of the horizon; they were as much dependent on a very unsteady compass as they would have been in an open boat in the midst of the Atlantic ocean; and although the little patch of soil on which they pitched their tent was not more than a few yards square, and produced little or nothing to eat, the horses, unhobbled and free as they were, shrunk aghast from the stony wilderness, and made no attempt to wander on the adamantine plain. On the following day the journey was continued, and the course kept by taking the bearings of any slight object in front. After ten painful miles there was a sensible fall in the Stony Desert, and now a

feature of totally different character presented itself. Before them lay an earthy plain, as bare as its predecessor, and resembling a boundless piece of ploughed land, on which floods had settled and subsided. Over this the weary horses toiled all day, their riders not knowing whether they were getting out of the waste or plunging deeper into it. About an hour before sunset a line of hills showed above the horizon, and, inspirited by this, they pulled up for the night at a little water, and mounted some dwarf box-trees to examine the distant mountains, failing, however, to make out whether they were rock or sand. At this bivouac there was not a blade of grass for the horses, who were fastened to the three solitary trees, at whose dry bark they gnawed all the night long. At early dawn the party started, and at last arrived within a mile and a half of the hills. A small rise was eagerly ascended to survey them more distinctly. Then they revealed themselves in their hideous nakedness. Sand-ridges stood before them, sand-ridges as bare and desolate as those they had left fifty miles behind. Bitterly disappointed, the leader ascended the nearest, and found it flanked on either side by other hills that terminated in the

ploughed plain, as those before seen terminated in the Stony Desert.

It will now be desirable to quote somewhat at length from Captain Sturt's journal, for he here advances a hypothesis regarding this desolate region, that it would be wrong to overlook. The sand-ridges met with before, on the south-east side of the desert, were running at an angle of about 18° to the west of north, having gradually changed from the original direction of about 6° to the eastward of that point. "I myself," he writes, "had marked this gradual change with great interest, because it was strongly corroborative of my views as to the course the current I have supposed to have swept over the central parts of the continent must have taken, i. e. a course at right-angles to the ridges. It is a remarkable fact that here on the northern side of the desert, and after an open interval of more than fifty miles, the same sand-ridges should occur, running in parallel lines at the same angle as before, into the very heart of the interior, as if they absolutely were never to terminate. Here, on both sides of us, to the eastward and to the westward, they followed each other like the waves of the sea in endless succession, suddenly terminating—as I have already

observed—on the vast plain into which they ran. What, I will ask, was I to conclude from these facts? That the wind had formed these remarkable accumulations of sand, as straight as an arrow, lying on the ground without a break in them for more than ninety miles at a stretch, and which we had already followed up for hundreds of miles; that is to say, across six degrees of latitude? No! winds may indeed have assisted in shaping their outlines, but I cannot think that these constituted the originating cause of their formation. They exhibit a regularity that water alone could have given, and to water, I believe, they plainly owe their first existence. It struck me then, and calmer reflection confirms the impression, that the whole of the low interior I had traversed was formerly a sea-bed, since raised from its submarine position by natural though hidden causes; that when this process of elevation so changed the state of things as to make a continuous continent of that which had been an archipelago of islands, a current would have passed across the central parts of it, the direction of which must have been parallel to the sandy ridges, and consequently from east to west, or nearly so, *that* also being the present dip of the interior, as I shall elsewhere

prove. I further think that the line of the Stony Desert being the lowest part of the interior, the current must there have swept along it with greater force, and have either made the breach in the sandy ridges now occupied by it, or have prevented their formation at the time when, under more favourable circumstances, they were thrown up on either side of it. I do not know if I am sufficiently clear in explanation, finding it difficult to lay down on paper all that crowds my own mind on this subject; neither can I, without destroying the interest my narrative may possess, now bring forward the arguments that gradually developed themselves in support of the foregoing hypothesis." Captain Sturt now became doubtful of the immediate proximity of an inland sea, though many circumstances combined to strengthen the impression he entertained that such a feature had existed on the very ground over which they had made their way.

Gloomy as the prospect in front seemed, the leader was unflinching in his determination to go forward. As the sand-ridges lay nearly parallel to their course, they rode up a kind of valley, and at some distance arrived at a forest of box, through which they pushed their way, the ground

beneath the horses' feet being destitute of vegetation, and the soil composed of the whitish clay peculiar to the flooded lands of the interior. Birds of many kinds now awoke the echoes with their cries, and astonished the travellers by their number and variety. This looked promising, for as may easily be imagined during the last few days, not a feather had been seen, and they were soon gratified by coming to a large creek, the bed of which was dry and clothed with couch grass. Expecting momentarily to open out a pond, they rode on, and seeing two magnificent trees growing in the creek, they approached them and found a native well of unusual dimensions, twenty-two feet in depth, and eight in breadth at the top. Here they camped and were watched with dismay by the birds coming for water, who crowded the trees; and the reader may judge how scarce was the precious element, when he learns that they dived into the dark well to procure it. Though Sturt would gladly have rested here for a few days, the scanty supply of water drove him forward. On emerging from the forest a plain was entered, whose surface, subject to floods and exposed to a vertical sun, was absolutely so torn and rent by solar heat, that there was scarcely room for the horses to tread, and

their hind feet were constantly slipping into chasms from eight to ten feet deep, into which the earth fell with a hollow, rumbling sound, as if into a grave. With much difficulty this abominable flat, which extended for six miles, was got over, and a creek reached with a shallow pond and plenty of grass. Here a halt was made for the day, two of the party being unwell, and the horses swollen and griped. Pursuing their journey for several days over sand-ridges and flats, the leader was cheered by arriving, on the 4th September, at a fine creek containing both grass and water, which he named after Mr. Eyre. Beyond this the country was wretched in the extreme; close and matted spinifex, to avoid which the wearied horses were obliged to lift their feet straight up, and a species of *mesembryanthemum* formed the only vegetation; the ridges extended in parallel lines beyond the range of vision, to the north, to the east, and to the west. The sand was of a deep red colour; and a bright narrow line of it showed out from amidst the sickly vegetation, marking the top of each ridge. Familiar as they were with similar scenes, Sturt records that his companion uttered an exclamation of amazement on first beholding it. "Good heavens!" said he, "did

ever man see such a country?" They were now thirty-four miles beyond Eyre Creek, and the water was decreasing every day. Mr. Browne was seriously ill, he seldom spoke, and his hands were constantly employed in pressing or supporting his back, to give some small relief to the pain he suffered; day by day the leader dreaded that his companion would sink as Mr. Poole had done, and, in addition to this, the three men were very unwell. They were 400 miles from the dépôt, with a fearful return journey before them. All that man could do, Sturt and his gallant companions had done nobly. Both water, food, and health had failed them, and there remained no alternative but to turn back, a course which the brave leader reluctantly adopted. He had penetrated much farther into Central Australia than any man had hitherto done. When his advance was stopped he had attained lat. $24^{\circ} 40'$ S. and long. 138° E., being within one degree of the tropic of Capricorn, and 150 miles of the central point of the Continent. When it is remembered that the object of the expedition was limited by the Home Government "to ascertaining the existence and the character of a supposed chain of hills, trending down from N.E. to S.W., and forming a great natural

division of the Continent," it must be acknowledged that he completed his arduous task nobly and fully, clearing up beyond the possibility of doubt, the non-existence of such a dividing range. Such a chain of mountains would entirely change the peculiar character of the Australian climate; and had they attained as great an altitude as even the snow-clad Alps lying at the south-east corner, their peaks would have caught the clouds, precipitating them in genial showers; noble rivers, to which the Darling and Murray would have been but as stagnant drains, would have found birth in their recesses, rolling downward to the south and west rich alluvial deposits, and turning into one giant corn-field the dismal wilderness on which countless sand-ridges now lay their forbidding length. In one word, a lofty dividing range would have made Australia the richest country in the world. It is absent, and in consequence the curse of desolation lies over the whole interior.

It is unnecessary to follow Captain Sturt any farther in his explorations. He returned to the dépôt, and, after resting, started off afresh, discovering Cooper's Creek, beyond which he encountered his old enemies, the sand-ridges. He men-

tions the effect of a hot N.E. gale. The blasts of heat were so terrific that he wondered the grass did not fire. This was nothing ideal, for everything, both animate and inanimate, gave way before it; the horses stood with their backs to the wind, and their noses sunk upon the ground, without the muscular strength to raise their heads; the birds sat upon the boughs mute and terrified, and the parched leaves fell like snow; whilst a thermometer graduated to 127° burst its tube, owing to the expansion of the mercury. Before fresh supplies reached them, the leader had lost the use of his limbs from scurvy; his skin became black and the muscles contracted. At length, on the 19th of January, 1846, the gallant band were once more safely at home, after seventeen months of hardship and adventure; and all eventually recovered their health and strength.

CHAPTER IV.

Mitchell, Kennedy, and Leichhardt.—Augustus C. Gregory's Expedition.—McDouall Stuart's journey across the Continent from Adelaide.

IN the same year Sir Thomas Mitchell was working towards the interior, and advanced within 260 miles of Cooper's Creek. Kennedy pushed on farther still, gaining a point within a hundred miles of Sturt's extreme position on that creek. Leichhardt had made a successful expedition into the N.E., crossing Arnheim's Land, and eventually reaching Port Essington. He now bent his steps again into the wilderness, proposing to traverse the Continent from east to west. In 1847 he quitted Moreton Bay with provisions for two years and a half. Twenty-seven years have now elapsed, and no trace of the party has ever been discovered. Many search expeditions have been sent out to try and solve the mystery, but all have returned unsuccessful. There are not wanting

people at this day in Australia who think he may still survive—an old man—held in captivity by the blacks. This is highly improbable. Central Australia accomplishes its work, whether by drought or by flood, too completely to leave any reasonable hope that any of the ill-fated expedition escaped. If the former and more lingering fate befell them, some traces may still be found in years to come; if the latter, the swollen waters will have hurried away every vestige, and not the smallest clue to the tragedy will ever be forthcoming.

The next expedition with which we are concerned in this volume is that of Mr. Augustus C. Gregory, in 1855, commonly called the North Australian Expedition. The reader will remember the discovery by Stokes of a noble river on the north coast, named the Victoria. Mr. Gregory's object was to penetrate the interior by means of this river, an enterprise which had as yet remained unattempted, though most sanguine hopes of the key to the desert being eventually found in this direction were entertained by many scientific and practical men. This was the first real effort made from the north, and possesses peculiar interest to us, from Colonel Warburton's expedi-

tion passing within a very few miles of the farthest point attained by Gregory in 1856.

The party, consisting of eighteen, left Moreton Bay on the 12th of August, 1855. They were in two vessels, a barque and a small schooner named the "Tom Tough," the latter of which was to remain at the leader's disposal. Proceeding through Torres Straits, the two vessels reached Treachery Bay in the middle of September, when the barque, having fulfilled her mission, departed, and the schooner, with eight of the party, sailed for the Victoria River, where they had orders to await Gregory, who, with the remaining nine men, took the overland route. Of the fifty horses originally embarked at Moreton Bay, nine had been either drowned in landing, or died on the voyage, and the remainder were much weakened by confinement. On the 6th of October the party started, and, crossing the McAdam range, arrived on the 10th at the Fitzmaurice River. Whilst camped here, the horses betrayed much restlessness at night, and when day dawned it was ascertained that they had been attacked by alligators, and three of them severely bitten and scratched. On the 16th the Victoria was sighted, but the descent was so steep that it could

only be accomplished by forming—with great labour—a path for the horses, in which chasms had to be filled up, and huge rocks removed, or rather toppled over with levers, when they thundered down into the valley beneath. On gaining the river-bank the “Tom Tough” was not to be found. At last it was discovered that the schooner had got ashore on a nasty ledge of rocks, and was in a very dangerous condition. She had leaked considerably, and a large quantity of stores had been destroyed or damaged; whilst the mischief was much increased by the supply of water on board failing, owing to which all the sheep but about fifty had died of thirst. However, when 1856 was only three days old, they got fairly away, and followed the course of the Victoria for upwards of a hundred miles. The country varied, the river sometimes running through fine, grassy plains, but more commonly through a rocky gorge, from 500 to 800 feet in depth, cut in the table-land, which here averaged 1000 feet above sea-level. The Victoria, which had been diminishing in size as they proceeded, forked into two branches in lat. $16^{\circ} 26'$ S., each of which was carefully followed up until it shrank into a little rivulet, and then died out. Thus

ended the stream that its first discoverers had compared to the Murray, and from which so much benefit had been expected. Like most of the coast rivers, it drained a tract of country running a couple of hundred miles inland, and then totally disappeared. In lat. $18^{\circ} 11'$ S., the country commenced to slope towards the southward in the shape of one uninterrupted desert, with an unbroken horizon, the vast plain being clothed with just sufficient spinifex and brush to hide the red sand when seen at a distance. No practicable route appearing to the southward, the leader decided on following the northern limit of the desert to the west, until a break of some kind should occur, and then branching off again on his old course south. On February 22nd a fine creek was reached, which was named after Captain Sturt, and its waters keeping a general south-west course, hopes of at last having found a path into the interior were raised. But as they journeyed onward, its fair promise died out in desolate plains, on which only brackish water was to be found; and once more the desert stood, in all its hideous monotony, before them. Mr. Gregory thus describes it:—"Nothing could have been more forbidding than the long, straight lines of

drift sand, which, having nearly an east and west direction, rose beyond each other like the waves of the sea, and though the red glare of the sand was partially concealed by a scanty growth of triodia (*spinifex*), the reflection from its surface caused the passing clouds to be coloured a deep purple. We had long passed the limit to which the tropical rains of the north-west coast extend, and the country south of 19° seemed only to be visited by occasional thunderstorms; thus, for a few miles the grass would be fresh and green, then there would be a long interval of dry, parched country, where no rain appeared to have fallen for twelve months. The channel of the creek also decreased in size, and the frequent occurrence of *salicornia* indicated the saline nature of the soil; the water became brackish, then salt, and finally spread out and terminated in the dry bed of a salt lake, a mile in diameter, which communicated with a second of larger size, nine miles long and five miles wide. Though now quite dry, there were marks of water having stood for considerable periods ten to fifteen feet deep, as the shells of mussels, in their natural position, were abundant more than a mile from the ordinary bank of the lake, showing that a large tract of

country is sometimes inundated. As the mussels are a species which live in fresh water, it is evident that at such times the lake is not salt; but it would appear that as the waters evaporate and recede they become saline, as the shells found within the limits of the lake were of other species, which affect brackish or salt water." The leader now travelled east for the purpose of discovering any outlet to the waters of this lake, and, after passing through a forest of acacia, entered the sandy desert. Some low, rocky hills were visible to the east, for which he steered, and ascended the highest, which was barely eighty feet above the plain, and formed of sandstone in horizontal strata. From the summit of this hill nothing was visible but one unbounded waste of sandy ridges and low, rocky hillocks. All was one inhospitable desert, as the flat, sandy country which absorbed the waters of the creek and lakes was incapable of originating water-courses. On this miserable little mound Gregory bestowed the name of Mount Wilson, and it marks the farthest point towards the interior that the North Australian Expedition reached. It became evident to the leader that they had arrived at one of those centres of depression for which Australia is remarkable,

where the waters of the surrounding country, collecting in wet seasons, are so rapidly evaporated in the dry seasons which usually intervene, that they alternately assume the character of shallow lakes and dry mud plains. Gregory was naturally bitterly disappointed at the promising waters of Sturt Creek not guiding him to any important outlet of the waters of the interior. It was the first water-course encountered which trended towards the south, and it seemed reasonable to suppose that it would either gather strength from tributaries, or add its quota to some larger river. He and his party followed it for more than 300 miles, and it ended—in salt lakes and sand-hills. It had, however, served them to a great extent; for, without it, they could never have made so much southing. Gregory had approached within 730 miles of Captain Sturt's farthest point, by starting from the opposite side of the Continent. Both had been baffled by precisely similar country—by countless ridges of red sand; and it is not a little singular that both gentlemen make use of the same simile regarding these phenomena, likening them repeatedly to “waves of the sea.” Mr. Gregory and his party headed north again, and made many

interesting discoveries before arriving at the settled districts on the east coast. Amongst other things they found an old camp of the lost explorer, Leichhardt, in which the ashes of the fire were still visible, and a great number of goat's bones scattered around. A large tree was marked with the letter L and the word DIG; but a hollow in the ground showed that whatever had been deposited was removed, for, on clearing out the earth, nothing could be found. This portion of his narrative, being confined to the Gulf of Carpentaria and the parts of Queensland between Port Denison and the Burnet River, need not be entered upon here; but before taking leave of this expedition it may be well to mention one very important fact discovered by Gregory, viz. that the northern country traversed by him much exceeds in altitude the depressed basin visited by Sturt—the salt lake near Mount Wilson being more than 800 feet above the level of the Stony Desert. This proves that the land slopes towards the south, and that did any rivers, or an inland sea, exist, they would find an outlet in this direction. That there is no such outlet, Eyre, by travelling round the Great Bight, sufficiently proved.

The next explorer whose tracks the reader is

invited to follow, is Mr. John McDouall Stuart, whose splendid discoveries opened out a line across the Continent from Adelaide to the Indian Ocean, who in some measure dissipated the idea that the whole of the interior was a desert, and along whose route now runs the electric telegraph, reaching from Port Darwin to the capital of South Australia, by means of which all important events happening in England are known a few hours later at the Antipodes, and the mother country and her distant offspring brought into daily—nay, into hourly communication.

Mr. Stuart had formed one of the party in Sturt's attempt to penetrate the interior described above, being draughtsman to the expedition. Undeterred by the desolation he then witnessed, and being generously assisted by Messrs. Chambers and Finke, Mr. Stuart made three several expeditions in the vicinity of Lake Torrens, discovering much valuable pastoral country, a large tract of which was presented to him by the South Australian Government. But these journeys, which were performed in the years 1858, 1859, were only preparatory to a longer flight. Since the time when he had accompanied the "Father of Australian Exploration," Sturt, into the sandy

desert, the great dream of Mr. Stuart's life had been to penetrate the interior. Through the liberality of his friends he was enabled to equip an expedition—small indeed, for it consisted but of two men—Kekwick and Head—besides himself; and with this slender following and thirteen horses, he left Mr. Chambers' station on March 2nd, 1860. The country which he now traversed, is the same that Colonel Warburton passed through on his way to Alice springs, and if given somewhat at length here, it will be merely for the purpose of avoiding recapitulation hereafter.

A fortnight after starting, a sad accident befell the explorer. The horse that was carrying his instruments broke away from the man who was leading him, burst the girths, and threw the saddle-bags on the ground. On examination, the instruments were found to be very much damaged, in fact nearly ruined. When the immense utility of a sextant on a journey such as this is considered, the mischief wrought by the mishap may be understood. In long. 135°, on the Neale River, good country was found, with salt-bush and a plentiful supply of grass. Following this to the north-west, a scrubby country was encountered, through which they had much difficulty in forcing

their way, and only did so at the expense of their packs and saddle-bags, which were torn almost to pieces by the stubborn brushwood. Unable to extricate themselves from this, the course was altered to north-east, when five miles brought them to the junction of three creeks, the water in one still running. Following one of these towards the north, an open country was reached with a little salt-bush; but an immense quantity of green grass, growing above a foot high, which gave the scene a most beautiful appearance. During the whole day this continued, and Mr. Stuart says in his diary, "The whole of the country we have travelled through to-day is the best for grass I have ever gone through; I have nowhere seen its equal." How different is this from the desolation encountered by Sturt! and yet they were in the same latitude as the Stony Desert, which lay only four degrees to the eastward. On the following day the course had to be altered repeatedly to avoid the mulga (*Acacia aneura*) scrub, which gave them a great deal of trouble; but fine holes of standing water were discovered, with numerous plants growing on their banks, amongst others, wild oats four feet in height; and again it is stated, "The country

gone over to-day, although stony, was completely covered with grass and salt-bush; it is even better than that passed yesterday. Some of the grass resembled the drake, some the wild wheat, and some the rye." On the 1st day of April Mr. Stuart, whose eyes had been inflamed for a long time, found that his right eye had become useless to him in taking observations with the patched-up sextant, for he saw two suns instead of one. Shortly afterwards a splendid creek was reached, with fine gum-trees of all heights and sizes, and here a new kind of parrot was found, together with cockatoos and numerous other birds. This beautiful water-course was named by Stuart after Mr. Finke, his sincere and tried friend, and one of the liberal supporters of the exploration. After leaving it, they passed over a plain of as fine a country as any man would wish to see—a beautiful red soil covered with grass a foot high. "I have not," says the leader, "passed through such splendid country since I have been in the colony." On the 6th April a most remarkable hill was seen, which at a distance had the appearance of a locomotive engine with its funnel. On reaching this, it proved to be a pillar of sandstone, standing on a hill upwards of 100

feet high. From the base of the column to the top was about 150 feet, its breadth twenty feet, and its depth ten. The summit was divided into two small peaks, and from the shaft being quite perpendicular, it formed a most prominent object in the landscape, and "Chambers' Pillar," as it was called by its discoverer, will always remain an unmistakeable landmark to the traveller. Two days more brought the little party to another fine creek named the Hugh, and here a low but very tedious range was encountered, the scrub being so thick that the horses could with difficulty be brought to face it, and the course intercepted by deep perpendicular ravines, which they were compelled to round, having their saddle-bags torn to pieces, and their skins and clothes in the same predicament. Travelling onward, the McDonnell Range was reached, the country being very good for pastoral purposes. Stuart had now reached the same latitude as Sturt's furthest advance into the interior in 1845, which lay east of him about five degrees. But what a different country he had travelled through! His difficulties had been many; but the route by which he had arrived so far, was as a land flowing with milk and honey compared to the sterile desert that had foiled his

old leader. The feed for the horses had been exceedingly good, and the supply of water abundant; indeed, on glancing at his map, the number of springs therein delineated is most remarkable.

Moving onward towards the north, nothing occurred of importance until Sunday, 22nd April, when we find the task that so many brave men for years past had been attempting, was at length achieved, and this great deed is inserted in Mr. Stuart's diary with so much simplicity and modesty, that it had best be given in his own words:—
“To-day I find from my observations of the sun, $111^{\circ} 00' 30''$, that I am camped in the centre of Australia. I have marked a tree and planted the British flag there. There is a high mount about two miles and a half to the north-north-east—I wish it had been in the centre; but on it to-morrow I will raise a cone of stones, plant the flag there, and name it Central Mount Stuart.

“*Monday, 23rd April, Centre.*—Took Kekwick and the flag, and went to the top of the mount, but found it to be much higher and more difficult of ascent than I anticipated. After a great deal of labour, slips, and knocks, we at last arrived at the top. It was quite as high as Mount Serle (discovered by Eyre in 1840), if not higher. The

view to the north is over a large plain of gums, mulga, and spinifex, with water-courses running through it. The large gum-creek that we crossed winds round this hill in a north-east direction ; at about ten miles it is joined by another—after joining they take a course more north, and I lost sight of them in the far-distant plain. To the north-north-east is the termination of the hills ; to the north-east, east, and south-east are broken ranges, and to the north-north-west the ranges on the west side of the plain terminate. To the north-west are broken ranges, and to the west is a very high peak, between which and this place to the south-west are a number of isolated hills. Built a large cone of stones, in the centre of which I placed a pole with the British flag nailed to it. Near the top of the cone I placed a small bottle, in which there is a slip of paper with our signatures to it, stating by whom it was raised. We then gave three hearty cheers for the flag, the emblem of civil and religious liberty, and may it be a sign to the natives that the dawn of liberty, civilization, and Christianity is about to break upon them ! We can see no water from the top. Descended, but did not reach the camp till after dark. This water still continues, which makes me

think there must certainly be more higher up. I have named the range John Range, after my friend and well-wisher, John Chambers, Esq., brother to James Chambers, Esq., one of the promoters of this expedition."

Can the reader imagine with what feelings of gratification this simple entry must have been made by the explorer on returning to his tent after the fatigues of that eventful day? There is something so inexpressibly touching in these two solitary Englishmen rearing their nation's flag and raising their voices to salute it, that though some portions of the above extract refer only to the surrounding country, it would be doing injustice to our countrymen to abridge a single word recorded on that day by the gallant leader.

Another hill about two miles from Mount Stuart was named Mount Esther, after the lady whose fair fingers worked the flag now floating in the breeze. A rose of a beautiful description was also found, having thorns on its branches, a sweet strong perfume, and a seed-vessel resembling a gherkin; the native orange also abounded. I mention this to show that however desolate the surrounding region may be, the centre of the continent itself is by no means wanting in vegetation.

Having followed Mr. Stuart thus far over a tract of country nearly all of which was subsequently travelled by Colonel Warburton and his party before striking to the westward, a very cursory sketch of his further proceedings must suffice. Central Mount Stuart lies in latitude 22° south, and the little party pushed their way north as far as latitude $18^{\circ} 41'$ south, when the natives became so threatening that they were compelled to return homeward, being too weak numerically to set the savages at defiance. After two months' rest the explorer started off again with a party numbering twelve men and forty-nine horses. They advanced a hundred miles north of the leader's farthest point in the previous year, but a barrier of impenetrable scrub barred the way, and provisions failing, they were again compelled to head south. Stimulated rather than depressed by these repeated failures, in December, 1861, he once more took the field with a party of ten men, and this time, though not without encountering many difficulties from the dense scrub, the hostility of the natives, and from sickness, his pluck and perseverance were rewarded, and he stood on the shores of the Indian Ocean. The latter part of his journey is most interesting, and its capabilities may be esti-

mated by the following description from the pen of the great explorer himself:—"Judging from the experience I have had in travelling through the Continent of Australia for the last twenty-two years, and also from the description that other explorers have given of the different portions they have examined in their journeys, I have no hesitation in saying that the country that I have discovered on and around the banks of the Adelaide River is more favourable than any other part of the continent for the formation of a new colony. The soil is generally of the richest nature ever formed for the benefit of mankind; black and alluvial, and capable of producing anything that could be desired, and watered by one of the finest rivers in Australia. This river was found by Lieutenant Helpman to be about four to seven fathoms deep at the mouth, and at 120 miles up (the farthest point he reached) it was found to be about seven fathoms deep, and nearly 100 yards broad, with a clear passage all the way up. I struck it about this point, and followed it down, encamping fifteen miles from its mouth, and found the water perfectly fresh, and the river broader, and apparently very deep; the country around most excellent, abundantly

supplied with fresh water, running in many flowing streams into the Adelaide River, the grass in many places growing six feet high, and the herbage very close—a thing seldom seen in a new country. The timber is chiefly composed of stringy-bark, gum, myall, casuarina, pine, and many other descriptions of large timber, all of which will be most useful to new colonists. There is also a plentiful supply of stone in the low rises suitable for building purposes, and any quantity of bamboo can be obtained from the river from two to fifty feet long. I measured one fifteen inches in circumference, and saw many larger. The river abounds in fish and waterfowl of all descriptions. On my arrival from the coast I kept more to the eastward of my north course, with the intention of seeing farther into the country. I crossed the sources of the running streams before alluded to, and had great difficulty in getting more to the west. They take their rise from large bodies of springs coming from extensive grassy plains, which proves there must be a very considerable underground drainage, as there are no hills of sufficient elevation to cause the supply of water in these streams. I feel confident that if a new settlement is formed in this splendid country, in a few

years it will become one of the brightest gems in the British Crown. To South Australia and some of the more remote Australian colonies, the benefits to be derived from the formation of such a colony would be equally advantageous, creating an outlet for their surplus beef and mutton, which would be eagerly consumed by the races in the Indian Islands, and payment made by the shipment of their useful ponies, and the other valuable products of those islands; indeed, I see one of the finest openings I am aware of for trading between these islands and a colony formed where proposed." Mr. Stuart was also of opinion that a herd of horses could be taken across the continent at any time, for although during his journey he was not fortunate in meeting with thunder-showers or rain, yet he was only two nights without water. In consequence of the favourable report thus made, the Northern territory was annexed to South Australia by commission under the Great Seal bearing date 8th July, 1863, a settlement was founded, and now, as mentioned before, the telegraph-line follows the route opened by the indomitable energy of John McDouall Stuart, and through him hundreds of thousands of fertile acres have been added to the land of his adoption, South Australia.

CHAPTER V.

Explorations of Mr. Frank Gregory from the West Coast.

BEFORE Stuart set out on his last successful expedition the news reached Adelaide of the sad fate of Messrs. Burke and Wills, who, after accomplishing the journey from Melbourne to the Gulf of Carpentaria, had perished from starvation on Cooper's Creek, where their depôt had been formed, and where they had looked forward to a termination of their sufferings. This fearful page in the history of Australian exploration cannot be entered upon here, neither can we follow Mr. McKinlay in his arduous journey from sea to sea—for both expeditions traversed ground to the eastward of the 135th meridian, and therefore to the east of the boundary chosen as separating the eastern and western halves of the continent—the reader therefore will only be asked to follow a brief sketch of Mr. Frank Gregory's explorations in North-west Australia.

Aided by both the Imperial and Colonial Governments, and also by private subscriptions, Mr. Gregory—a brother of Augustus Gregory, whose explorations on the Victoria River have been already described—took the field in April, 1861, sailing from Perth in a small vessel named the “Dolphin,” and arriving at Nichol Bay, to the southward and eastward of the Dampier Archipelago, about the middle of May. The party consisted of nine men and twenty horses, all of which were successfully landed by the 21st, and four days afterwards the expedition got fairly away. Their course at first lay towards the south-west, but a large river named the Fortescue was soon struck, and this stream having its source to the south-east, it was resolved to follow it up. The travelling now became very fatiguing, owing to the stony nature of the bed, which was also full of huge rocks that materially impeded the progress of the party. As they advanced the country improved; deep pools became more continuous, and grass abundant; but the water-worn rocks frequently jammed the horses into narrow passes, from whence they could not be extricated without meeting with severe falls; their shoes also soon became loose or wrenched off, so they made small headway each day, the desolate

nature of the country without the valley of the river compelling them to continue in its bed. On the 5th of June the valley narrowed, until the channel of the river was walled in on both banks by perpendicular cliffs, and farther progress was checked in that direction. A range of hills had been seen for the last two days to the south, running parallel with the river, and for this the leader now struck; but finding it was impossible to cross the chain, he again made for the Fortescue, hitting it some distance farther east, and finding that it had opened into deep reaches of water containing abundance of fish of large size. A few miles further on it broke up into a number of small channels in an open, grassy plain, and was lost as a river. Another attempt to find a pass through the Hammersley Range failed, but the main bed of the Fortescue was once more encountered, and, following this up, the mountains that had so long opposed their passage were left behind. Whilst the party formed a camp, Mr. Gregory climbed the hills to get a view of the country in advance. A laborious ascent of nearly an hour brought him to one of the highest summits of the range, at an elevation of about 2700 feet above the sea, and 700 feet above the bed of the river. From this point

he saw fair hope of succeeding in pushing south, and reaching a large extent of open level plain in that direction. On descending to the camp, he accidentally dislodged with his foot a fragment of rock of several tons weight, and to his horror the leader saw it rushing with fearful velocity towards the deep gorge in which the horses were feeding. After carrying all before it for a quarter of a mile, it made a clear spring over a cliff two hundred feet in depth, and plunged into the waters below with a sound like thunder, leading the people at the camp to suppose that a large portion of the cliff had fallen. Fortunately, it did not frighten the horses enough to produce a stampede, as a similar occurrence had done once before. Pushing on in a general southerly direction, Mr. Gregory met with two rivers, named by him respectively the Hardey and the Ashburton, and at length he came within sight of Mount Augustus, on the Lyons River, discovered by him three years before, and having thus joined the two surveys he returned to the "Dolphin" to recruit, the horses being too much worn to attempt farther eastward exploration in their present condition. The journey back was not over the old ground, for after leaving the Hammersley Ranges Mr. Gregory struck north-

west, and discovering the Sherlock River, reached Nichol Bay from the eastward on the 19th July, the horses all suffering fearfully, many of them almost hoofless.

On the 29th of July the explorers set out again with nineteen horses and eighty-seven days' rations, reaching their old camp on the Sherlock four days afterwards. Here they had been compelled to abandon a horse whose hoofs were worn quite through, and though the water and feed were both abundant, the poor brute had never stirred; mortification had probably set in, and the body was found, half devoured by crows and native dogs. Gregory now struck eastward, despite the information elicited from a native that no water lay in that direction. With two companions only, he searched for an available route, and at last found a river about 300 yards wide, in which were a few pools of water, and, following it up, a gorge in a granite range was reached with sufficient grass to supply all the horses, and splendid lakes, a quarter of a mile wide, teeming with water-fowl. This river was named the Yule, and to it the rest of the party were brought forward. Still going eastward, and meeting with a variety of country with which I

shall not trouble the reader, the rivers Strelley and Shaw were discovered; and on the 27th of August a river was reached which received several tributaries, and formed a stream of some importance. This was named the De Grey, in honour of Earl De Grey (now the Marquis of Ripon) who was formerly President of the Geographical Society. Still bent on making towards the east, Gregory and his party advanced, passing through such stony, bad country that some of the horses were disabled, and three of the party had to take their turn on foot. Though the horses were sadly in want of rest, the season was too far advanced to venture on incurring any delay, and still the east course was maintained. At length the country opened out into an extensive plain of white waving grass—to the north uninterrupted by a single elevation; while to the east and south, at eight or ten miles distant, rose ranges of granite hills, capped with horizontal sand-stones. At the opposite edge of the plain they came upon a river 200 yards wide, running to the northward. The long drought had reduced it to a few shallow pools, running from one to the other through the deep sand in the bed; but the scenery in its vicinity was most beautiful—grassy plains, ex-

tending to the distant horizon, and the banks of the stream itself overhung by the graceful foliage of the cajeput, or tea-tree (*Melaleuca leucodendron*). This river was named by Gregory the Oakover.

For two days the party followed the channel of this stream; but, finding it turned too much towards the west, they left it and entered the range, getting through it only to emerge upon open sandy plains of vast extent, no object being observable from N.N.E. round to S.S.E. except low ridges of red drift-sand, in many parts nearly bare of vegetation. Into this wilderness Gregory attempted to penetrate, and entered the sand-plain, travelling between the ridges, which ran in straight lines, parallel to each other, at the distance of several hundred yards apart, the sand being thrown by the south-east gales into acute ridges, thirty to sixty feet high, their direction being almost invariably N. 109° E. They got over eighteen miles of this miserable waste, the valleys yielding little else but triodia, with occasional patches of stunted gum-forest, where was scattered a little good grass. No water could be found, no change in the features of the country were observable ahead; so Gregory was obliged to have recourse to the expedient of falling back and

forming a dépôt, and in doing this they were compelled to abandon a horse.

On the 5th of September, leaving the party to rest, the leader walked twelve miles along the foot of the range in search of water, and to ascertain if a better line of country could be found in that direction; but the same aridity continued to display itself, and he only found one pool, in a gully about four miles from the camp. Thus disappointed, Gregory started off on the following day with only Messrs. Brown and Harding, taking six of the strongest horses, sixteen days' rations, and six gallons of water, and having instructed the party left behind to remain in their present camp for three days, and then fall back upon the Oakover. The leader and his two companions steered S.S.E. along the ranges for several miles, looking for some stream-bed that might lead through the plains; but these all disappeared within a mile of the hills. Crossing the ridges proving most fatiguing to the horses, they determined to run eastward between the sand-waves, which they did for fifteen miles, when the animals again showed signs of failing, and they were compelled to make for some deep rocky gorges in the hills ten miles to the south, which involved their

meeting the ridges at right-angles and climbing them. This course, however, presented the least risk, and was adopted, though only four out of the ten miles were accomplished before the horses gave in, and they were compelled to halt for the night. At daylight on the following morning three gallons of water were divided amongst the horses, and the party started off, hoping to reach the ranges by noon; but they had hardly gone three miles when one of the pack animals failed, though carrying a load of only forty pounds' weight, and this was transferred to the leader's saddle-horse. Even when thus relieved, the worn-out horse could only stagger a couple of miles farther, when they were compelled to abandon him, leaving him under the shade of the only tree that they could find. Gregory, seeing that many hours would be occupied in bringing the horses to the hills, started ahead on foot, directing his companions to come on slowly, while he was to make a signal by fires in case of finding water. Two hours' heavy toil through the burning sand, under a vertical sun, brought him to the ranges, but ravine after ravine was hunted without success, and at five in the afternoon no water had been found. For twelve hours, on a scanty breakfast, and without a drop

to wet his parched lips, the leader had been walking, with the thermometer over 100° of Fahrenheit, and when he rejoined his companions, who were anxiously awaiting him, it was as much as he could do to carry his rifle and accoutrements. The horses were in a miserable plight, and it became evident that, in case of not finding water, the only chance of saving them lay in abandoning the pack-saddles, provisions, &c. They therefore encamped for the night on the last plot of grass they could find, and made arrangements for an early start in the morning. A few pints of water were still left in the keg, and this enabled the weary men to recruit their strength with a little tea and damper.

At four o'clock they were afoot, and having suspended in a large tree the whole of their equipment, except the riding-saddles and firearms, and having divided a pint of water amongst them for breakfast, early dawn found them driving their famished horses before them towards the dépôt, now thirty-two miles distant. For the first eight miles they got on pretty well, but the moment the fierce sun commenced to pour down its fiery rays, the animals flagged greatly, and they were soon obliged to relinquish another,

quite unable to proceed. By nine o'clock the leader found that the severe exercise of the previous day, combined with the small allowance of food, were beginning to tell upon him, and that it was probable he could not reach the depôt until next morning, by which time the party left there were to fall back to the Oakover; he therefore directed Mr. Brown, who was somewhat fresher than himself, to push on for the camp, and to bring out fresh horses with water, whilst Mr. Harding and Gregory would do their best to bring on any straggling horses that could not keep up with him. The anxiety of the leader must indeed have been terrible, for their lives hung solely on the chance of Brown reaching the depôt before night. The men left there would start for the Oakover the first thing in the morning, and if this happened, the doom of the three adventurers was sealed; they would surely die, would perish miserably of starvation. Brown soon shot ahead, and the other two struggled onward, and by dark had succeeded in reaching to within nine miles of the depôt, finding unmistakeable evidence towards evening of the wretched condition to which the horses taken on by their companion were reduced, by the saddles, guns,

hobbles, and even bridles scattered along the line of march, which had been flung aside to enable them to go on a few miles farther. At dawn the two men arose from their beds of sand, stiff and giddy, though much refreshed by the cold night air. Without assistance they must soon have given in; flesh and blood could not stand another day without water in that burning oven. But happily relief was at hand, and they had not toiled more than half the distance that still separated them from the depôt, when their eyes were gladdened by the sight of Mr. Brown bringing fresh horses and a supply of water. He had struggled on gallantly, and had reached the camp at eight o'clock on the previous evening, with one horse only, the remainder having knocked up and been abandoned, one by one, towards the close of his eventful journey. This gentleman followed their back tracks, for the purpose of recovering the articles thrown away the previous evening. These were all picked up, but the stores left at the granite range were too distant to be attempted, and are probably still mouldering beneath the tree wherein the explorers placed them. Three of the horses were also recovered, but the two first abandoned were

never seen again. Mr. Gregory remarks upon the singular effects of excessive thirst upon the eyes of the horses. "They absolutely sunk into their heads, until there was a hollow of sufficient depth to entirely bury the thumb in it, and there was an appearance as though the whole of the head had shrunk with them, producing a very unpleasant and ghastly expression." On taking into consideration the reduced number and strength of the horses, it became evident to the leader, that any attempt to cross the wilderness, that had already caused them so much loss and trouble, would be useless. He gives the following reasons for supposing that some great river was in his immediate neighbourhood, and I extract the passage *verbatim* from his journal, as demonstrating the opinions held by an observant man and an intrepid explorer, on the features of the interior:—

"Not only had we now attained within a very few miles of the longitude in which, from various geographical data, there are just grounds for believing a large river may be found to exist, draining Central Australia; but the character of the country appeared strongly to indicate the vicinity of such a feature; added to which the

gradual decline in the elevation of the country, notwithstanding our increasing distance from the coast, tended towards the same conclusion. Nor should we omit the strong evidences that the remarkable ridges of drift-sand which encumbered the plains must, in the first instance, have been brought from the interior by water, and then have been blown by the strong prevailing south-east winds across the country, in a direction at least 50° from that which they originally came from. This, with the clean, water-worn appearance of the sand, the bold outlines of the hills seen to the far east, and the number of native fires observed in the same direction, must all tend to support the hypothesis that the western half of Australia is probably drained by a large river in about this meridian. I could not, therefore, help regretting more than ever, that we should be driven back at such an interesting spot; but mature reflection convinced me that any further attempt, with our present means, at this period of the year, was almost certain to be attended with the most disastrous results." Mr. Gregory accordingly fell back on the Oakover, ran that river down until it was joined by the De Grey, and traced the latter to its mouth at Breaker

Inlet. After exploring the Strelley, he returned to Nichol Bay with his party, where the "Dolphin" lay at anchor awaiting them; and on the 17th of October they re-embarked, and reached the Swan River in safety on the 9th of November. This exploration was eminently useful to Western Australia, opening out for her children many fine rivers, thousands of acres of good pasture-land, and conclusively showing that that portion of the continent was not of the villainous character that had hitherto been ascribed to it.

Several other explorers made attempts to penetrate to the eastward from Western Australia; but the general features of the country proved it unfit for settlement.

This brief outline will enable the reader to understand how much had been performed by the principal pioneers in the western half of the continent. We have followed Sturt until a sea of sand checked his progress; we have seen the brothers Gregory, one striking from the north, the other from the north-west, both brought to a standstill by the same obstacle; and of the arid nature of the country bordering the Great Bight, Mr. Eyre's terrible journey has sufficiently taught us. On the other hand, we have Stuart discovering

a wonderful belt, running due north and south through the very centre of the continent, by means of which the communication between the two seas has been rendered comparatively easy. Diverge from it fifty miles east or west and the sand-ridges in all their hideous uniformity are before the traveller. Colonel Egerton Warburton availed himself of Stuart's route until he gained the centre of the continent, and then struck boldly into that terrible western desert of which his predecessors had given so appalling a description.

CHAPTER VI.

Introduction of camels into Australia: their value in journeys of exploration.—Project of an expedition across the interior from the central line of telegraph.

NOTWITHSTANDING the many attempts and the partial successes we have recorded, it was generally felt by the Governments and colonists, both of South and Western Australia, that the Western interior still remained to all intents and purposes a *terra incognita*. Public attention continued steadily fixed on this point, some people surmising that good country still lay there unknown, others wishing the matter cleared up for the advancement of science. The attention of the Government was constantly directed towards the desirability of effecting this important discovery by many of its leading citizens, pre-eminent among whom stood Mr. Thomas Elder, a wealthy inhabitant of Adelaide, and a member of the Legislative Council for South Australia; and Mr. Walter W. Hughes,

a large sheep-owner and an influential inhabitant of the same colony. The disinterested generosity and the public spirit displayed by both these gentlemen are beyond all praise, and their names will always be remembered by their fellow-colonists with respect and gratitude as the initiators and promoters of Colonel Egerton Warburton's memorable expedition into the interior.

A most important element in the eventual success of the enterprise was the introduction of camels into Australia. Without these animals no such journey as that of Colonel Warburton could under any possibility have been successfully accomplished.

The first idea of employing the camel in Australian exploration seems to have originated with a member of the Royal Geographical Society, for we find Sir Roderick Murchison, in his address to that body in 1844,¹ saying, "Others again say, with our member, Mr. Gowen, that a thorough exploration of the interior of Australia will never be effected until we import thither camels from our eastern possessions, and thus at once get rid of the vast difficulties attending the want of water."

¹ Journal of the Royal Geographical Society, vol. xiv. p. cii.

The suggestion seems to have borne fruit, for in 1846 we hear of a camel accompanying Mr. Horrocks on an expedition in South Australia. Messrs. Burke and Wills, as well as McKinlay, had a few of these animals with them on their journeys, but they seem never to have been very plentiful until Mr. Elder conceived the idea of introducing them on a large scale. In 1866 a gentleman named Stuckey was despatched to India by Mr. Elder for the purpose of purchasing a number of camels and asses. Out of 124 of the former shipped at Kurrachee, 121 were landed in South Australia in perfectly good condition; three were lost on the voyage from cold, which produced inflammation of the lungs. They bore the confinement of the passage remarkably well, in fact from being too liberally supplied with native grass, hay, and the chaff of rape and of wheat, they became so fat that it became necessary to place them on a shorter scale of diet. Their allowance of water consisted of from two to three gallons each daily. No dressing or bedding was used, simply coir matting nailed upon the deck to prevent their feet from slipping; neither were partitions of any kind necessary, the docile animals lying or standing quietly side by side, fastened only by the head.

After landing, the camels commenced rapidly to increase, but an epidemic attacked them, a kind of mange, by which disease more than seventy were swept away. The Afghan drivers, some dozen in number, who had accompanied their animals, stated that this complaint was common to the camel in its own country, and that it could be cured by means of oil extracted from certain shrubs. But none of the requisite specific could be found in Australia, and a grave objection to the importation of camels seemed likely to present itself, for the sudden loss of so large a number at one fell swoop was a serious matter. The luxuriant feed seemed to encourage the disease, and a remedy was looked for in vain. At length it was proposed to apply Stockholm tar externally, and to administer the same ingredient mixed up with oil, internally; and the experiment was attended with the happiest effects, the Afghans themselves pronouncing it far superior to the native medicines. It was found that the Australian vegetation was admirably adapted to the camels, in fact they seemed to thrive better in barren than in rich districts. From the height and long neck of these animals they are enabled to feed upon the bushes which form their natural food at a distance from

the ground far above the reach of horse or bullock, and therefore they can live and flourish where either of the latter would infallibly starve; for though grass is frequently a scarce commodity in the bush, yet the most sterile tracts are commonly clothed with scrubby shrubs. Their digestion being wonderfully strong, no green food comes amiss to them. Saltbush, prickly acacia, sandalwood, mulga, she-oak, all are devoured with apparent relish, and if really hungry they will not flinch from mallee, wattle, gum, or as far as is yet known from any tree that grows. In fact it seems ascertained beyond a doubt that camels will thrive, and perform heavy work where any other beast of burden would be sure to starve.

Another merit possessed by these animals must not be overlooked. From the peculiar construction of the stomach they are able to pass several days without water, and suffer no great inconvenience from the privation. With this characteristic of the camel every child is familiar, but perhaps it is not so generally known that though they all possess this capability, yet training is necessary to develope it fully. A camel not accustomed to abstinence would neglect to husband the store contained within it, and would soon show symp-

toms of distress; while another, inured to privation, would make a march of several days without suffering.

Mr. Elder imported camels of three different breeds; namely, the fast or Mekrana camel for riding purposes; the hill camel from Scinde, suitable for riding or baggage, being the common camel of Western India; and the hairy camel from Candahar, fine, strong, thick-set animals, eight, nine and ten feet high, the best kind for heavy loads. The female breeds about four times in five years, and gives a large quantity of beautiful milk, allowing herself to be handled like a cow. At four years of age the young camel sheds two teeth and continues this each year like the sheep, until the seventh, when it is full mouthed, with eight teeth. At ten years it is in its prime, it may then be likened to a four-year-old horse, and it continues in good working condition for thirty years longer. But little trouble is necessary to break camels in. They are handled when quite young, and are capable of bearing a light load at three years old. Mr. Elder's herd was accompanied by Afghan camel-drivers who were accustomed to the animals from their boyhood, and hence has arisen an impression that Europeans

are unequal to their management. This is entirely a mistake. A colonist can learn to handle camels in a few weeks, and with patience will manage them as well as an Afghan; but he must remember that a drove of camels require widely different treatment from a team of bullocks. The harsh shout and the whip employed in driving the latter must be entirely cast aside, and a system of kindness substituted. The most remarkable feature in the management of camels by the native drivers is the entire absence of punishment. They never beat them, and have impressed their fellow bushmen with a wholesome dread of the dire consequences that would follow the use of the stick. Mr. Stuckey considers them the most docile of animals. The result of several years' experience has shown him that vice occurs less often with camels than with ordinary stock, and that the only reason why Europeans cannot manage them is the want of patience and experience. They are exceedingly sure of foot, and will travel over the most rugged places without inconvenience. The only difficulty in the way of rearing and breeding camels *ad libitum* is that paddocks are necessary to prevent them wandering in every direction; for, unlike other stock, they neither herd nor attach

themselves to any particular place or part of the country. The native drivers are quite right in warning white men not to irritate the camel by ill-usage, for when excited to anger he becomes a terrible antagonist, and his attack is likely enough to end fatally for any man who is the object of it. His strength, long neck, height, weight, and tremendous teeth or tusks make it almost impossible to beat him off single-handed, and he has an ugly habit of suddenly dropping on his knees upon the body of a prostrate enemy, which tends very much to reduce the chance of the latter escaping with life; indeed those most familiar with them, say, that in an open plain, escape from an infuriated camel is impossible. One great inconvenience in using camels in Australia is to be found in the difficulty of familiarizing horses and bullocks to their presence or neighbourhood, and in the terror with which they always inspire these animals at first sight. The colonial horses can hardly be called timid, yet it is stated, that however long a time one of them may have worked or fed beside camels, he is certain to make a bolt, if one of the latter fairly faces him, and will often do so if only looked at unexpectedly. This, however, must not be regarded as insurmountable, for in

India and Africa they undoubtedly work in company.

Regarding the capability of Mr. Elder's camels for burden, on one occasion a string of more than sixty travelled with an average load of 600lbs. of wool each, making from seventeen to eighteen miles per diem, and enduring four and five days' thirst easily. A heavy camel carried an Afghan with the mail 350 miles in a week ; and Mr. Stuckey rode from Puttapa to Umberatana, a distance of eighty miles, in one day, and thinks that 400 miles might easily be accomplished in five days on a riding camel. The latter travel at from seven to ten miles an hour for many hours together, but during hot weather they do not travel so well in the heat of the day as at night. At Port Augusta on one occasion, and in consequence of a bet between the men as to what one of the camels—a large one, seven years old—could do, ten bags of flour, or 2000lbs., were placed upon its back when kneeling, and it rose and carried this load without difficulty round the camp. The same animal drew six dead camels nearly a mile over sand, one at a time, with only a rope round its neck, and it has frequently drawn a sixty-gallon bucket from a whip-well.

These instances will give some idea of the power of the camel both for burden and draught. The following extract from "McKinlay's Tracks" will show the reader the opinion formed of the camel on that expedition :—"McKinlay took four camels, in company of a goodly quadrupedal assemblage, consisting besides of twenty-four horses, twelve bullocks, and a hundred sheep. The camel disputes with the horse the palm of usefulness in the Australian expeditions. In powers of endurance the camel seemed quite the equal of his rival, but he was more unruly and troublesome, and very uncompanionable with the other animals, his fellow-travellers. McKinlay found a decided convenience in the height of his back, as compared with that of the horse, in keeping the supplies of the party out of the water on the occasion of traversing the flooded parts of the march. But both horse and camel alike proved useful in other ways less premeditated. Necessity cures many prejudices, and hunger is a sauce to reconcile us to a very miscellaneous diet. As the stock diminished, and as the appetite increased, even horse-flesh proved no unsavoury morsel, lean, tough, and jaded as it too often was. Horse after horse fell under the 'jerking' process,

consisting of cutting the flesh into long strips to be dried in the sun. The camel, too, took his turn under the knife, and our travellers were even far more anxious to secure an adequate quantity than to differ about the quality of their fare. Only once was the case otherwise, when one of the camels, 'old and worn out, with sores all over him,' was doomed to the knife and the jerking. Refractory even in the pot, the tough liver and kidneys defy the teeth of the hungry travellers, and the cook is able to boast for once on the journey that there was superfluity on the board."

Mr. Elder's camels have made a number of trips with stores to northern stations, bringing back wool, which is packed in smaller bales than usual for the purpose of easy handling and carriage, and is slung, one bale on each side of a pack-saddle. They were also employed in the construction of the Trans-Continental telegraph line, and were found most useful in transporting posts, &c. In short, both Mr. Elder and those who have had the care and charge of them since their arrival, have formed a high opinion of their value, of their capacity for work, and of their suitability for many places and purposes where, or for which, cattle and horses

could not be used. Their value for the purposes of exploration will be clearly demonstrated in the following pages. No sufficient estimate of their powers could be obtained from McKinlay's journey, for he was hampered by a flock of sheep, and from the nature of the country the camels became footsore, and had to be fitted with boots or hides of leather. Still he was favourably impressed with their powers of endurance when fed upon the roughest or poorest scrub; and his horses on several occasions fell away rapidly and alarmingly in condition, whilst the camels caused no anxiety on this account. Colonel Warburton's expedition may therefore be regarded as the first true trial of the capability of the camel for exploring purposes in Australia.

In the month of August, 1872, the advisability of exploring the interior between Central Mount Stuart and Perth was brought before the Government of South Australia in such a way as practically to leave no course open to them except acquiescence. The public urged the matter, the press were equally determined, and in the most liberal manner Mr. Elder placed his camels at the disposal of the Government, and offered to provide

native drivers, both free of expense. The Government accepted the proposal, Colonel Egerton Warburton was named as leader of the expedition, a sufficient number of camels and horses for transport service being placed at his disposal. Through various causes the arrangements thus made broke down; but Mr. Elder, who was bent upon the undertaking, resolved to carry it out independently of the Government, and, in conjunction with Mr. Walter W. Hughes, who volunteered to share the expense with him, he entrusted Colonel Warburton with the chief command, authorizing him to organize such a party and procure such an outfit as he deemed necessary for the successful accomplishment of the object in view. The plan first proposed by Messrs Elder and Hughes was that the party should muster at Beltana Station, the head-quarters of the camels, and from thence proceed to the Peake, in latitude 28° S., which latter place had gained some celebrity as one of the principal depôts of the party employed in the construction of the overland telegraph. Here it was intended that Colonel Warburton should quit the telegraph line, and make a détour to the westward, rejoining the line again at Central Mount Stuart. This circuit would be through

unknown country, and, besides enabling him to gain a tolerably correct idea of the capabilities of the camels, would serve to familiarize the whole party with the character of the territory they would have hereafter to penetrate. At Mount Stuart he was to receive a reinforcement of camels, and, thus strengthened, to strike out straight for the capital of Western Australia. Having reached their destination, and recruited their strength, it was proposed that the party should return overland in such a direction as to bisect the territory between their outward route and Eyre's coast track, thus striking the telegraph line again somewhere in the neighbourhood of the Peake, the spot where, formerly, they had first quitted it. This latter portion of the work, and the exact direction they would take, would of course depend in a great measure on the success of the earlier part of the expedition, and nothing beyond the general outline was settled regarding it.

But in the meanwhile the Government of South Australia had not remained idle. They had organized an expedition of which they accepted the sole responsibility, and placed it under the command of Mr. William Gosse, a gentleman who had for many years conducted Government surveys in

various parts of South Australia, and had thus undergone a training well calculated to fit him for the important post now assigned to him. He was to be accompanied by Mr. Henry Gosse, who from having been employed in the construction of the overland telegraph line, was well acquainted with the character of the country through which, at the outset, the course of the party would lie. The point of departure fixed upon by the Government was the Finke River, which, taking its rise near the MacDonnell Ranges, runs for the most part in a southerly direction. It had been already traced as far as latitude $25^{\circ} 30' S.$, and it was believed that by following its farther course Mr. Gosse would be forwarded a very considerable distance on his way towards Fremantle, which was to be the westerly terminus of the Government expedition as well as of the party under the command of Colonel Warburton. Beltana Station was also their rendezvous, and there Mr. Gosse was to receive a portion of his equipment, consisting of camels and their requisites, generously furnished by Mr. Elder, accompanied by three Afghan drivers, also provided at that gentleman's expense. From Beltana he was to follow the telegraph line to Lady Charlotte Waters, a little north of the

26th parallel, where a number of staunch horses hitherto employed in the telegraph service would join him; and, his arrangements thus completed, he would make for the capital of Western Australia, taking a south-west by west course, and entirely distinct from Colonel Warburton, who, starting from a more northern point would require to head farther south in order to reach his destination.

It is perhaps difficult to convey to Englishmen the great interest excited in the breasts of the colonists by the equipment of these two expeditions. Though both were initiated in South Australia, the greater portion of the territory through which they would pass belonged to the sister colony. Still some hundred thousand square miles of unexamined country lay within the boundary of the former, and on this account alone the Government had ample justification for taking the field. Neither should the liberality of Messrs Elder and Hughes here pass unnoticed. Not the slightest personal benefit could accrue to either of these gentlemen whether their expedition was successful or the reverse. A pure public spirit animated them both, and such was Mr. Elder's attachment to the cause of science, that while bearing half the present outlay, he wrote to Baron Von Mueller of

Melbourne—a gentleman whose practical interest in the advance of geographical knowledge is widely acknowledged beyond the colonies—offering to supply camels for the use of any further expeditions that Victoria or the more eastern settlements might think fit to organize for the examination of the unknown country lying between them and the Trans-Australian Telegraph.

The annals of the expedition equipped by Messrs. Elder and Hughes will be found in Colonel Egerton Warburton's journal, which it is now time to introduce to the reader, and a record of terrible suffering more nobly borne has rarely been given to the world. The country traversed was in the main barren and inhospitable—a dreary waste, a howling wilderness. No glimpses of gorgeous scenery, no noble rivers flowing through fertile plains, gladdened the hearts of the gallant band as they fought their way westward. Yet though pleasing landscapes may have been absent, the impress of a stern determination that no suffering could quell and no hardships daunt is apparent in every line of the narrative—a narrative so simply and unaffectedly told that no mere embellishment of language could add to its charm or heighten its effect. Some little explanation, gathered from the gallant traveller's

own lips, is however occasionally added where necessary for the better comprehension of the subject.

But before commencing the journal itself, it may not be amiss to give a brief sketch of the leader's earlier career. Peter Egerton Warburton was born on the 15th of August, 1813. After pursuing the usual course of study at Addiscombe, he entered the Bombay army as a subaltern in the year 1834, and served in India until the year 1853, passing the greater part of the time in the Adjutant-General's Department, and rising through each grade until he attained his majority, and became Deputy Adjutant-General at Head-Quarters. He then resigned the service in order that he might proceed with his wife and family to New Zealand, of which island he had resolved to become a colonist. Circumstances caused some modification of his original intention, for instead of making New Zealand his home, he took up his abode in the colony of South Australia. Soon after his arrival at Adelaide he was appointed to command the police forces of the whole colony, which onerous situation he held for thirteen years. During this time his excessive love of exploration developed itself, and on three or four different

occasions, when in the course of duty he visited the distant outposts under his command, he took with him a couple of troopers, and, with the sanction of the Government, pushed three and four hundred miles into unknown parts of the colony, making valuable additions to the known area of pastoral country. After relinquishing the Commissionership of Police, Major Egerton Warburton was made Commandant of the Volunteer Forces of the Colony of South Australia, with the local rank of Colonel, and this office he ably filled as long as the Corps was embodied. Such is in a few words the previous history of the leader of the expedition ; how he was selected for that important post, first by the Government and afterwards by Mr. Elder, has been already related.

Mr. Richard Egerton Warburton, son of the Colonel, and his second in command, who plotted the map of the Route from which the one illustrating the present volume has been derived, was born in 1840, and ever since arriving at the age of manhood had been regarded as a first-class bushman. How ably he seconded his gallant father the sequel will show.

NOTE.—In compiling the foregoing Introduction to Colonel Warburton's Journal, I have availed myself of the published

narratives of the various explorers mentioned therein, and to these, as well as to the *South Australian Register*, and several Western Australian newspapers, I must express my acknowledgment of the assistance received from them. To Dr. Henry Trimen and to Mr. Gould ("Birds of Australia"), to whom I am also indebted for information in compiling some of the notes to the Journal, my thanks have been expressed through the Editor in the Preface to the present work. I have also obtained much information from the official and other Reports of Australian Exploration not generally accessible to the public, which have been lent to me by the Royal Geographical Society.

C. H. E.

JOURNAL
OF
COLONEL P. EGERTON WARBURTON.

THE HON. T. ELDER, AND W. W. HUGHES, Esq.,—

As it is scarcely worth troubling you with any detailed account of the proceedings of your exploring party whilst traversing the known country from Adelaide to Alice Springs, near the centre of the continent, I shall give merely an outline of that part of our journey.

We left Adelaide on the 21st September, 1872, reached Beltana Station on the 26th, and started thence for Alice Springs on the 3rd October.

A fortnight was spent in examining the country about the Neales, westward of Mount O'Halloran; but, finding nothing fit for permanent occupation, we struck off for the Alberga river, running it down to its junction with the Stevenson, on which

we were detained for a few days by rain and thunderstorms.

Ascending the Stevenson, which was well watered and fringed with excellent pastoral country, we reached Charlotte Waters on the 25th November, where we were very kindly received by Mr. Johnstone, in charge of the telegraph station.

On the 21st December, 1872, we arrived at the station which was to be our starting-point for our journey westward, namely, Alice Springs. Long. $133^{\circ} 53' 14''$ east; lat., $23^{\circ} 40'$ south. About 1120 miles distant from Adelaide.

[It may be remembered that the original plan was that, on arrival at the Peake, Colonel Warburton should quit the telegraph line and make a *détour* to the westward, rejoining the line about the centre of the continent. This he did, in company with his son and another companion; but the country proved to be so totally unfitted for pastoral purposes that the leader deemed it inadvisable to continue in it, and accordingly the *détour* was considerably shortened, and the telegraph line struck at Charlotte Waters, instead of farther north. During this little expedition only horses were used by the explorers, the main body of the expedition, with the camels, proceeding steadily towards Alice Springs.]

Being assured by those who had resided two years in that part of the country that the summer rains would prevent my moving till the early part

of April, I sent Mr. Burt down to Adelaide and Beltana for four months' additional supplies to meet the expenditure of the forced detention. I had much reason to regret this measure; for, instead of long-continued tropical rain, as prognosticated, there was none at all, and I might just as well have started at once.

Mr. Burt, on his return from Adelaide, declined to accompany the party, and my son, as next in seniority, took his place.

The party now consisted of myself, my son (Richard Egerton Warburton), J. W. Lewis, Sahleh and Halleem (two Afghan camel-drivers), Dennis White (cook and assistant camel-man), and "Charley" (a native lad). We had four riding, twelve baggage, and one spare camel, with six months' provisions, and started from Alice Springs on the 15th April, 1873. From this date I shall offer you extracts from my daily journal, which will enable you to follow out our course on the map more readily.

EXTRACTS FROM JOURNAL.

April 15th, 1873.—As was to be expected, our first day's work was a mere getting under weigh. Two saddles broke, and the loads were unsteady.

Partly owing to the camels being so fat, the saddles would not fit over their humps. This is a fault on the right side. Camped on the telegraph line, about five miles from the springs. Our road over low rocky hills, with mulga scrub (*acacia aneura*), a gentle ascent all the way.

[All the camels with the expedition were one-humped, and the saddles were formed of two longitudinal wooden battens, united by three arched hoops. The foremost hoop formed the pommel of the front seat; the middle hoop went over the hump, just clear of the skin; and the aftermost hoop formed the back of the hind seat. Perhaps it would render the description more intelligible if I said that there were two seats, one before and one behind the hump. If only one man rode on the camel, he invariably occupied the rear seat, and thus formed a most grotesque object from a short distance, for he presented the appearance of being perched on the very *croupe* of the animal. The hollow in which the rider sat was filled up and made soft with his own blankets, &c., and the stirrups were fastened on either side to the battens. The fore-part of the saddle was commonly occupied by the personal effects of the rider—his spare clothes, boots, arms, ammunition, a small canvas water-bottle, &c.; and the baggage animals were packed as most convenient, the load of each varying according to the nature and bulk of his burden. Both pack and riding saddles were fastened on by two leather girths, one at either end of the framework, but only the foremost was drawn tight; the after-girth, passing over the tender part of the stomach, was left moderately slack. When required to be loaded, the



The Start.

camels were made to kneel down by word of command. The body of the animal then rested on a horny pad supplied by nature for this purpose, and a space being left between the belly and the ground, the girths could be passed whilst in that position. It was then also that the rider mounted, and some little experience was at first required to prevent a fall, from the peculiar motion imparted to the animal's body when rising. The means of guiding the camel consisted of a wooden button passed through the cartilage of the nose, to the end of which was attached a light piece of string. Though this may seem but a slender headstall for so large an animal, experience proved that it was amply sufficient. Colonel Warburton describes them as very sagacious and docile, and readily obeying the slightest gesture of the rider. The baggage camels were always kept in two parties of five each, the nose-rope of the rear animal being lightly tied to the breaching of its leader, and so on until the string was completed. I said "lightly tied," because this was necessary; for in case of any sudden panic, unless the string gave way, the button would be torn out of the nose. At night it was only requisite to tie them by this string to any little shrub, and they would generally remain quiet until dawn, lying down and sleeping. Single file is their favourite way of travelling.]

16th.—The first six miles over similar country to that of yesterday. Took in a supply of water at a creek, then entered a scrubby flat. The scrub is not of that formidable description it had been represented to be, and would have been quite passable, even had there been no road cut through

it. The light rain which fell on the 12th, though leaving no surface-water, made parts of the road so boggy that we could not have crossed them had we started a day earlier. One saddle broken again to-day. We camped in the scrub, and have had a treat which few in like circumstances get—rum and fresh milk. I have often abused camels, and persecuted, or rather prosecuted, sly grog-sellers. I will never do so again.

17th.—On the telegraph line. Road still boggy in places. Country good, but especially the last ten or twelve miles to Burt Creek, consisting of fine, open grassy plains. We camped on the Burt. There was a little water in a hole from the late rain, but the government well was quite dry. Have again reason to praise camels and contrabandists. Weather looks like rain, but none has fallen.

18th.—West-south-westerly direction towards the western end of the Mount Hay Range. We had unfortunately neglected to collect the small addition to our water which we might have got; indeed the Burt had been represented such a sure creek for water, that I thought I could turn in to it at any time if I found no water on the more direct course to Mount Hay. The first part of the

journey over good open grassy plains, the same as yesterday, but no water. Then the scrub commenced. It became thicker and the grass worse as we went on. Seeing no prospect of water on our direct course, we turned to the north-west, to cut the "well-watered Burt;" but after a few miles the country became still worse, and spinifex took the place of grass. Halted, and though we had but little water, the want did not trouble us, as we fully expected to cut the Hugh river next day.

The Burt is not a creek at all in the proper meaning of the term; it is merely a slight superficial depression on flat ground, carrying off the surface-drainage when the rain is sufficiently heavy and continuous to leave more than the soil can soak up or the shallow pans hold. When there is plenty of water all over the country there is some in the Burt too, no doubt.

19th.—Started on our old course west-south-west for Mount Hay, full of hopes that we must tumble into the Hugh, which had been represented as running *through* the McDonnell Ranges under Brinkley's Bluff. Travelled all day, but there was no such creek as the Hugh, nor indeed was there any creek at all properly so called, though there were one or two just appreciable

depressions over which water would flow when it could not go anywhere else. At six or seven miles' distance from the foot of Mount Hay we emerged from the scrub and entered on the finest grassy plains I have ever seen. There are some shallow water-courses which take off the surplus water and I dare say carry it to feed the Hugh, but that the Hugh *as a creek* does not exist north of the McDonnell Ranges I am quite satisfied. We camped, or rather threw off the loads, and laid down in the dark after nearly thirteen hours' unbroken riding. We have not seen a drop of water, and have only about one quart, kept for any one who may fall ill for want of it. No fire lighted, as we could not cook without water. Hungry and thirsty, we lay down in silence. I did not spend a pleasant night.

Sunday, 20th.—Our first consideration on waking was how to supply our urgent need of water. We could not find any near us, I therefore sent Lewis with the two Afghans and four camels, our empty casks and water-bags, to make their way to "Hamilton Springs," twenty-five miles distant. I knew merely the direction and probable distance of these springs, it was therefore doubtful whether they could be found at all, but, if successful, the

party could not return till late at night. We were in great want both of good food and water, but lay down to wait patiently, some of the party suffering much from want of food and water. We had little hope of speedy relief, but, by the goodness of Providence, a blessed shower of rain fell upon us at 1 p.m. All the tarpaulins were quickly spread, and we got two or three buckets of water. What a change! All was now activity, cheerfulness, and heartfelt thanksgiving. A cake and a pot of tea were soon in the hands of each, and we were as happy and contented as kings. About 3 p.m. Lewis returned with a full supply of water from clay-pans, without having to go so far as the springs. I hope we may never forget this day.

In the early part of the night rain fell again. We are camped on a low level flat, and have to dig a trench round the fire. All were wet through, but we laid down where we could and slept in peace.

21st.—Spent the day in drying our clothes and baggage.

22nd.—We skirted the north side of the Hay Range, crossed three small gum creeks, all dry; at twelve miles came to a good-sized creek with sandy bed. We followed it down till it turned north-east, and then camped. In ordinary seasons

this creek would have given a fair supply of water, and we obtained a little by sinking.

23rd.—Started in a west-south-west direction, varying slightly, now to the southward, and now to the westward. Country lightly scrubbed and beautifully grassed, in parts open glades and good plains; grass in abundance, but no water. Camped under a hill about 200 feet high, from whence we fixed to-morrow's course. Had there been permanent water, a radius of three miles from this hill would have made as pretty a small run as could be desired.

24th.—Hitherto the camels have been tied up every night, but this did not allow them sufficient time to feed, so we left them loose. One broke its hobbles and refused to be caught in the morning, which delayed our departure.¹

I have been hoping for some days to cut the Finke, and am bearing in towards the McDonnell Ranges for this purpose. At two miles we struck a small creek coming from the range. Altered the course a little to clear some hills. Country

¹ Hobbles consist of a few links of chain with a swivel in the middle and a stout strap with a buckle at either end. These are made fast round the fore legs of the animal just above the hoof, and, confining the feet together, effectually prevent straying.

good. At noon came to a large sandy gum creek, but its course was wrong for the Finke.

This creek is a very fine one, with old, wide-spreading gum-trees, and would in ordinary seasons furnish a good supply of water, but there was none now on the surface. We ascended it for two miles and found a native well. Camped and sunk another, getting plenty of good water. This water must be permanent, as we are travelling in a year of drought. I shall remain here until Monday, the 28th, to rest the camels, arrange our loads, and issue rations. This is the first water of a permanent character we have met with for nine days.

I went with Richard up to the head of the creek, which runs in a narrow gorge; we found no water, but many marks of there being plenty in usual seasons.

25th and 26th.—I have taken every means of fixing our position as accurately as possible, because this place will become a fresh starting-point; the latitude is $23^{\circ} 25' 27''$; the longitude, by account, $132^{\circ} 34' 0''$; and the variation of the compass, $2^{\circ} 30' 0''$ east.

Sunday, 27th.—Resting in part. Rations issued for a week. Map and journal brought up. Water-

bags filled. Dampers baked and meat boiled. Camels brought in and saddled. Everything ready for an early start to-morrow.

28th.—A pleasant ride through a well-grassed country. Camped at 4 p.m. on a fine gum creek —the Dashwood. No surface water.

29th.—Several camels strayed, so we could not start until 1 p.m. At a short distance up the creek we found a native well in the sand, and filled all our bags. After travelling a couple of miles south-west by south, we turned south to examine a cascade 280 feet high, with some nice pools of water in the rocky ledges. Struck the creek again and camped on it, but it contained no surface-water.

The country to-day has been beautiful, with park-like scenery and splendid grass. Water procurable at easy depth in the creek. Strong south-easterly wind all night.

30th.—Thermometer down to 41° Fahrenheit this morning. Travelled up to head of the creek, finding a good pool of water in a rocky glen. As the present has been a year of drought, I think this water must be permanent. Both banks of the Dashwood abound in springs, and water might be got anywhere in ten minutes.

Leaving the glen, had to return nearly to our camp before we could head westward. Turned south in the afternoon, to try whether the Finke really did run through the McDonnell Ranges, as confidently stated by some. We camped at 4.30 p.m. under a granite hillock. Country not so good.

May 1st.—Following a south-westerly course, we found a shallow clay-pan and watered the camels. We came upon a large creek, but running the wrong way for the Finke; two hours afterwards struck another creek, also running in the wrong direction. This is our last hope, and it is now quite certain that the Finke does not run *through* the McDonnell Ranges but takes its rise in the midst of them.

It was necessary to settle this question, as my future course depended upon it. Had the Finke come from anywhere *north* of the McDonnell Ranges, I should have steadily run it up. We shall trouble ourselves now no more about this fable. Obtained a midday observation and started afresh to the northward and westward. At 2 p.m. struck a small, poor-looking creek, but it had a pool of surface water, so we camped here, congratulating ourselves upon our first camp near surface

water. The camels drank with apparent satisfaction, but when it came to our turn the water was so intensely bitter we could not use it. This water was beautifully clear, and had every appearance of being perfectly drinkable. Its bitterness was most intense, though none of the party were able to ascertain from whence this arose. This creek crosses the Tropic of Capricorn.

2nd. — Rounded what we supposed to be Haast's Bluff, of Giles, and at 9 a.m. struck a fine sandy creek, fringed with gum-trees, but with a clear level bed. At a distance of four or five miles down the creek we found water and shot two black cockatoos (probably either *Calyptrorhynchus funereus*, or *C. Baudini*, Gould). We continued down the water-course and camped on its left bank. This is certainly a beautiful creek to look at. It must at times carry down an immense body of water, but there is none now on its surface, nor did its bed show spots favourable for retaining pools when the floods subsided.

3rd.—We still continued down the creek, hoping to find a lake at its mouth. It continued for ten or twelve miles farther—a magnificent water-course—but after that it fell off. As it reaches the lower level, its banks cannot confine the floods

which inundate the flats; the channel narrows, trees take root, and sand-banks intercept the stream, which finally splits into narrow water-courses and spreads itself over the plains, and so it ends as a creek.

Camped at the end of the creek. No water.

4th.—Sent two of the party with spades up the creek to look for water, and followed myself shortly afterwards with the rest. Water was found in a clay hole on the right bank, and we halted for Sunday.

5th.—Started north-west by west over sandy scrub. At eight miles the country became more open, with spinifex and casuarina-trees. Crossed low sand ridges running east and west.

Nothing but spinifex, mulga scrub, and casuarina forest all day, the latter giving a melancholy beauty to the scenery, more resembling a Turkish cemetery than anything else. The trees are straight-stemmed and tall. I should think they would be well suited for telegraph poles, if it were possible to cart them away. They stand in thousands and thousands, but there is not a scrap of feed nor a drop of water in the country.

6th.—The camels went off in the night; no great wonder, as they had nothing else to do.

Starting at noon, we travelled eleven miles over the same sort of country as yesterday, and reached the western end of Central Mount Wedge. We could not find any water, and things were not looking well. Camped in the afternoon under the mount and on the edge of our first salt-lake. In the night wild dogs were heard, and water-birds flew over us—both good signs.

7th.—Thinking it possible we might have to return to Sunday's camp, I halted for the double purpose of resting the camels and searching for water. I sent out in three different directions, and one of the party returned quickly, having found a rock-hole with a soakage spring near the camp.

Thus relieved from anxiety, I proceeded to measure Central Mount Wedge. It is a very remarkable hill in the Mount Wedge Range. When I first saw it from a moderate elevation, at a distance of seventy or eighty miles, no other part of the range was visible, and it stood out as an isolated hill from a sea of scrub, bearing a striking resemblance to Mount Wedge Island (a small island situated near the coast of Western Australia), as seen from a distance at sea.

Measuring with all the care I could, its total height from the high saddle on which it stood

proved to be 1650 feet; the eastern point being a perpendicular scarp of red rock, 615 feet above the slope of the mountain; it was this sharp-cut face that I had seen from a distance.

The hill was too formidable for me to ascend. Two of the party, however, went up for me, as I wanted the bearing of some hills to check my longitude; it was a very arduous task, and on reaching the summit a thick haze prevented anything being seen distinctly. The barometer also was of little use, as it fell below its marked scale. In descending, one of the men had a narrow escape from a large piece of rock which grazed him as it fell.

One of the water-searchers returned in the evening, having found some splendid waters in glens in the range. The Afghans, who had also gone out in the morning, returned; they had found no water, but, what was much worse, had contrived to lose a camel, or rather to let it run away with saddle and all equipments. This camel was a serious loss. It seems, from the account given by its rider, that he dismounted to pick up some object which attracted his attention, and tied the animal up, but that it broke his nose-rope, and immediately made off.

8th.—I sent off the Afghan on my riding camel to recover the runaway animal, and moved the camp in the afternoon seven miles along the range opposite the glens found yesterday, promising to remain there till he returned. He joined us again in the evening, but without the camel; he stated that he had ridden sixty miles and lost the tracks. This accident never ought to have happened at the hands of a professed camel-driver; the loss was very heavy, the animal being one of our best riding camels.

9th.—Saddled the camels and took them as far up the first glen as they would go; but they were so frightened at the stupendous rocks that they could not be got to the water; we therefore sent them round to the second glen, which is more easy of access, but the same thing occurred there, the perpendicular walls of rock which towered above them excited such terror that they would not taste the water even when brought to them in a bucket. This was unfortunate, as we particularly wished them to lay in a good supply, to carry us through the dry country we are now in.

We went to explore the glens. I might, perhaps, by degrees, convey to another person in conversation some idea of these places, but I

cannot attempt it in writing; they are very grand and imposing. At the entrance of the first glen a huge column of basalt has been launched from a height of about 300 feet, and has stuck perpendicularly in the ground; the base has been worn away by the torrent, and cannot much longer support this heavy top. It stands a sentry to guard the beautiful pool, which occupies the whole width of the entrance to the glen. I had no time for accurate measurements, and give only estimates. The pool is about fifteen feet wide, fifty long, and the basaltic walls which enclose it are about 300 feet in perpendicular height. Looking from the entrance, the view does not extend beyond thirty yards, but after scrambling that far, another turn in the glen at a right angle to the first, shows a still grander split in the mountain, with a large circular pool of deep clear water, almost wholly roofed over by a single huge slab of basalt. As the sun cannot reach this water, it never can fail.

The second glen is on the whole less rugged and grand, but more picturesque. We ascended to the head of this glen, finding many springs and much running water. It is impossible to do these grand places justice by any verbal descrip-

tion ; they must be seen to be rightly appreciated. I have called the first "Glen Elder," the second "Glen Hughes," after the public-spirited projectors under whose auspices this expedition has been sent out.

I could have spent a week at this interesting place pleasantly, and in the afternoon left it with regret. We travelled over eleven miles of alternate porcupine-grass (*triodia pungens*, or spinifex) and scrub, towards a low hill to the north-west. No signs of water ; but we seemed to have passed out of the region of the salt lagoons.

10th.—North by west over this wretched country, no water-courses, no grass, nothing but porcupine-grass and scrub. Advanced seventeen miles towards what I suppose to be a part of the Reynold's Range, our latitude being $22^{\circ} 25' 5''$.

[A short description of the Spinifex, mentioned so often by explorers in the interior of Australia, may be interesting to the reader. It is a sharp spiny grass, growing in tussocks of from eighteen inches to five feet in diameter. When quite young the shoots are green, but as they mature their colour becomes of nearly the same hue as wheat straw, and, instead of enlivening, serves only to add desolation to the aspect of the wilderness. It is quite uneatable even for camels, who are compelled to thread their way painfully through its mazes, never planting a foot on the stools, if they can possibly avoid it. To horses

it has on more than one occasion proved most destructive, piercing and cutting their legs, which in a very short time become fly-blown, when the animals have either to be destroyed or abandoned. The spiny shoots are of all heights, from the little spike that wounds the fetlock to the longer blade that penetrates the hock. It is one of the most cheerless objects that an explorer can meet, and it is perhaps unnecessary to say that the country it loves to dwell in is utterly useless for pastoral purposes. It is called indifferently porcupine-spinifex or *triodia*.]

Sunday, 11th.—Obliged to move, to try for water for the camels. Sent two of the party on ahead in different directions to look for it. They each found a little, and we camped on a rock-hole that in ordinary seasons would have supplied all our wants.

12th.—Pursued a westerly course along a well-grassed valley, between two ranges. Halted at the end of the valley, to await the return of two water-seekers in the ranges. Some water had been found in the upper part of a sandy creek. I went to see it, and then settled to send the camels at daylight next morning, bare-backed, to feed and drink all day.

I was much vexed at my carelessness in not knowing there was to be a total eclipse of the moon. I might have been prepared to some

extent by rating my Adelaide timekeeper, and getting my true time at camp, and though I had no telescope that would note the different contacts and phases accurately, I might have approximately corrected my longitude. Taken by surprise, when the eclipse commenced, I could get nothing to be safely relied upon, though I tried. It was a splendid sight, and our view was perfect. The moon was at its full, and the eclipse commenced shortly after sundown, lasting for about two hours, 'during half of which time it was total. After an hour the shadow began to move off.

13th.—Halt. Recruiting camels and filling water-bags.

14th.—Travelled twenty miles towards a granite range, over good country, grassy scrub, with patches of salt and cotton-bush.² For the last six miles the plain was dotted over with large granite mounds, and intersected by several creeks running northward.

In the evening two of us scrambled up some steep, bare, smooth sheets of granite, which formed

² Dr. Hooker is of opinion that the "cotton-bush" mentioned in the text is probably *Gossypium Sturtii*. The "salt-bush" and the "salt-plant," seen for the first time later in the journey and boiled for food, were probably species of *Salicornia*, but, as Dr. Hooker remarks, there are many salt-plants.—[Ed.]

the southern face of part of the range. I did not like the task, being obliged to take off my boots and clamber up on hands and knees. We found a fine hole in the face of the rock, perfectly round and nearly full of water. This hole was entirely a work of nature, and, strange to say, was on the point of a smooth *projecting* part of the rock, where it might have been supposed impossible for any water to lodge. How it could have been formed in such a place I cannot conceive, but so prominent was its position as to be visible from the plain at a considerable distance. The descent was, to me, nearly as bad as the ascent; a sitting slide, feet and fingers acting as skids. The portion of the rock in which this hole was situated presented a convex form, and was more than 100 feet above the level of the plain.

One camel useless from sore back. This never ought to have happened, but the fault cannot now be remedied, so it need not be laid upon any particular shoulders.

15th.—Proceeding on a westerly course over a scrubby plain, between two ridges, we struck a fine creek, and camped of course upon it. There was no surface water, but we found fine springs about a mile or two up the creek.

16th.—Sent camels and water-bags up to Annie's Springs. We started in the afternoon, and made ten miles of good westing; passed a likely-looking place for water, but, not being in immediate want of it, I did not stop to examine it.

We did eighteen miles to-day, but not on one course; the final result, however, was nearly west, there being only a few seconds' difference between our latitudes of to-day and yesterday.

Our camp is on very high ground at the foot of granite rocks in the range; the spot is very pretty, and the hill under which we are located has two immense boulders of red granite at the top. This is a marked hill, and, though of no great altitude above us, is still very high and can be seen from a great distance.

Lewis, though far from well, discovered a fine water-hole in a gap in the range, and as we have also found water near the camp, we are all thankful and happy at the prospect of a fine Sunday.

Sunday, 18th.—Halt. Weekly rations issued; true time at camp taken, variation of compass, $1^{\circ} 16'$ east; lat., $22^{\circ} 11' 48''$ south; long., by account, $130^{\circ} 40'$ east.

19th.—Proceeding north a short way, to round the hills, then turned west ten miles. Struck

a small creek, which we went up six miles, but found only a little water, not enough for our wants. Camped in thick scrub; our general course upon the creek was south-east, but we made little headway; Sunday's camp bearing north, 63° east, about seven miles.

20th.—We are now amongst a jumble of low granite hills surrounded with thick scrub. No leading water-course, and the country due north and west looks bad; little hope of water. Sent the empty bags to the small drainage-hole down the creek to be filled, and ascended a neighbouring hill, to see what course would be the best. Two out of the three sides open to us looked very dismal; therefore altered the course S.S.E. for a promising-looking break in the range we had been leaving behind us. This is a great disappointment, and it keeps us hanging about the same locality, but there is no help for it.

Went six miles through thick scrub and camped at the foot of the range. My two assistants looking for water, found likely places, but they were all dry.

21st.—Kept the camp standing to save the camels, and again sent out my two companions to examine the range ahead. They found a splendid

1874 MARCH, IN AUSTRALIA, 1874-1875.

which falls in a stream about six miles off, as most
people have been satisfied from the fact of having no
water back there.

April. With water nearly gone, during the time of
the winter drought, as in the water found yesterday,
'This is a fine place, and the water is a long creek;
the whole ground over which the water first
runs from the hills may be called one spring, as
water is plentiful everywhere on the flat. 'The
winter water-course was running, though there
could not have been any rain for a long time. It
is the best place we have yet seen for a camp;
running water, fuel, and game, with
good food for the animals, are not found every
day in the water of Australia in a year of
drought.

'The name "Iron Springs," with our camp brand
W., and the year, are carved on a tree. 'This gorge
has two branches, in both of which there is water;
but that in the right-hand one is more
abundant, is not necessary to say. 'I
never, however, he wanted, as the
give an inexhaustible supply. Some
water are covered with a greeny slime
as I know not; the water itself is
good, the only water not mixing with

water-hole in a gorge about six miles off, so our minds are now relieved from the fear of having to make back-tracks.

22nd.—Five miles south-west along the foot of the range brought us to the water found yesterday. This is a fine place, and the source of a long creek; the whole ground over which the waters first emerge from the hills may be called one spring, as water is procurable anywhere on the flat. The centre water-course was running, though there could not have been any rain for a long time. It is the best place we have yet seen for a camp; running water, bulrushes, and gum-trees, with good feed for the camels, are not found every day in the centre of Australia in a year of drought.

The name "Eva Springs," with our camp brand W., and the year, are carved on a tree. This gorge has two branches, in both of which there is water; but that in the right-hand one, though more abundant, is not accessible to animals. It could never, however, be wanted, as the springs would give an inexhaustible supply. Some parts of the water are covered with a greasy slime, from what cause I know not; the water itself is quite pure and good, the oily scum not mixing with it. This

greasy covering was iridescent, but perfectly tasteless.

The place being so favourable, I left the camp standing, under Lewis's charge, with directions to do his best to mend the camels' backs and their saddles, to re-arrange their loads, and throw away everything we could safely dispense with, whilst my son and I went out for a week, to try what the country ahead could produce.

23rd.—I started with Richard and Charley (the black boy), south-west along the range, over villainous country. Something in the scrub frightened the leading camel, it turned suddenly round, and ran off as fast as it could; of course the other two followed its example, and shared its fright, though they could not have seen what caused it.³ Three men rushing wildly through the bush on runaway camels, which they dared not try to pull up for fear of breaking the nose-ropes, must have been a ludicrous sight, and when we

³ Professor Owen, in a note to the editor on this subject, says, "The several species of poisonous serpents and their deadly character in the deserts of Arabia and Lybia have engendered an instinctive dread of them in the camels or dromedaries of the Bedouins; and I suspect that the 'something in the scrub,' suggested by the sudden bolt of the camels at full speed, may have been some large serpent."

collected our scattered forces and recovered our dropped articles, we all had a hearty laugh at each other.

Luckily camels are not much given to running away, otherwise it would prove a serious matter. If the rider pulls at the single string that forms the means of guiding the animals, the only result is that its head is brought round to the fore part of the saddle, without in the least diminishing its headlong career; and as the camel can form no idea of where he is going, either a heavy fall or the laceration of the cartilage would be the most probable effect of an attempt to pull up. Though these animals prefer travelling in single file, they scatter wildly in every direction when terrified. On this occasion each of the three camels took a different course, and the ludicrous effect was much heightened by the peculiar position of the riders on the hind seat of the saddles.

Passing through an opening in the range, we reached a better travelling country, and camped in the afternoon on a high plain with more scrub. South by west were three remarkable hills, distant about twenty-five miles, one table-topped, quite flat and scarped all round, the middle one saddle-backed, and the third wedge-shaped and scarped at



24th. of May.—"The Queen."

the point. All three seemed very high, and high also were our hopes of finding something good about them. A few drops of rain fell in the evening.

24th.—Started for the hills over good travelling country, lightly scrubbed. At twelve miles struck a large gum-creek, bordered by exuberant vegetation, and forming a very fine piece of country. We crossed the creek, expecting to find water amongst the gum-trees ahead, but found none. Coming upon some good patches of cotton-bush, we camped, thinking to do the camels a kindness, but they would not remain on them because we had put them there.

It was a most uncomfortable place for us ; the ants swarmed over everything, and over us ; indeed they wanted to take away the cockatoos we had for dinner, but we rescued them. We had a little drop of rum, and did not forget to drink the health of " the Queen," this being her Majesty's birthday. Finding the camels would not stay where we wanted, there was no inducement for us to remain, so we saddled up and went back to the creek, where we had at least clean sand and no ants.

Sunday, 25th.—We were obliged to move, not having found any water since leaving our depôt. We examined the mouth of the creek, which

expended itself by inundating a large tract of level country, the vegetation exuberant but dry, with dry beds of back-water lagoons. Were it not a year of absolute drought, we should here have found plenty of water.

At 9.30 a.m. started for Table Mountain, but on getting near it could see nothing that indicated a lodgment of water, nor any water-course; so as we were nearly at the end of our own supply, we could not afford to run the risk of losing the whole of next day in what might turn out a fruitless search. Under the circumstances, it was better to shorten our distance from the dépôt rather than to increase it, we therefore turned so as to cut our creek higher up than we had at first struck it, and then run it up.

Camped in the creek again near a native well, in which at first a few drops of water were visible; but it was only the drainage of a light shower on Saturday, and disappeared on the removal of a little sand from the bottom.

26th.—Rode ten miles up the creek without seeing any place that promised water. At last our eyes were gladdened by a comparative verdure at a spot on the right bank. Here we found a native well, and, clearing it out,

came upon a splendid spring of excellent water. Thus relieved, we were at liberty to extend our trip, instead of returning crestfallen to the depôt.

27th.—West by north, eight miles. Scrub all the way. Examined some low granite hills, found a drainage-hole, dry, also native tracts, some sticks burning at a camp, and a chopped tree, but no water.

We travelled ten miles farther through scrub between low hills, until, reaching a dead flat expanse of sandy scrub, I deemed it hopeless to look for water in such a locality. We camped in the scrub, tormented with flies, worked hard to cut out a native bees' hive, but got no honey, their house was empty.⁴

The weather all day was cloudy and very hot, unlike a tropical May day. At night we were blessed with a heavy thunder-storm and drenching rain.

⁴ The abode of the native Australian bee is usually a hollow tree, of which there is no lack in the bush. The blacks are very clever at finding the combs and chop them out with their stone tomahawks. The insect itself is much smaller than our English bee, hardly exceeding the common house-fly in size, and is stingless. The honey is remarkably sweet, and esteemed a great delicacy by bushmen, amongst whom a nest is termed a "sugar-bag."

28th.—It rained all night, and we spent the whole morning drying our clothes. In the afternoon we started eastward on our return to the depôt. After eleven miles, partly through bad scrub, we camped under the lee of a low granite hill; it rained again heavily during the night, but, being now on a slope, we were not obliged, as we had been the night before, to dig trenches round our blankets to prevent being flooded out. The rain is a blessing; personal discomfort, therefore, is of no consequence.

29th.—Returned to the depôt through a good deal of scrub, but there was abundance of water all about, and the creek which we had left so dry two days before was now running.

30th.—Hoping to push through the bad country before us on the rain that had fallen, I broke up the camp and started west. Bad scrub part of the way; camped near a small creek we had passed on our return yesterday. There was every appearance of rain in the evening, but it turned off into heavy dew.

31st.—Foggy. Travelled west. Found a creek running east and west, which we had not seen before when up here. There was no surface water, although the heavy rain was so recent.

Turned south and camped on some clay-pans.

Sunday, June 1st.—Rest and water.

2nd.—Travelled west thirteen miles, through scrub all day, more or less thick. We found a small clay hole just sufficient for a night's supply, and camped.

3rd.—Sixteen miles over high sandy table-land, moderately scrubby. There was no hope of water in such a country; no water-course was met with all day, and no hills seen to the westward. Bad place for camels, but no better to be found.

4th.—Continuing west, we saw some crested doves,⁵ and spent an hour looking all round for

⁵ *The Crested Dove, or Top-knot Pigeon of Warburton (Ocyphaps Lophotes).*—"The chasteness of its colouring, the extreme elegance of its form, and the graceful crest which flows backwards from its occiput, all tend to render this pigeon one of the most lovely of its tribe inhabiting Australia; and in fact I consider it not surpassed in beauty by any other from any part of the world. It is to be regretted that, owing to its being exclusively an inhabitant of the plains of the interior, it can never become an object of general observation; but, like the *Peristera histrionica* and *Geophaps scripta*, it can only be seen by those of our enterprising countrymen whose love of exploring new countries prompts them to leave for a time the haunts of civilized man, to wander among the wilds of the distant interior—a portion of the country never to be regarded as solitary or uninteresting by those who look with admiration

water, but found none. After travelling twenty miles, camped under a sand ridge.

The sand ridges here have gum-trees of an

upon the wonderful works of their Creator. The fauna of the interior of Australia has in fact, as I have frequently had occasion to remark in the course of the present work, features peculiarly its own, and its members are eminently interesting, both for their novelty and for the beauty and elegance of their form.

“As might be supposed, this bird has attracted the notice of all our travellers who have journeyed across the colonial line of demarcation. Captain Sturt mentions it as being numerous on the plains of Wellington Valley, and in the neighbourhood of the Morumbidgee. It would seem to affect marshy situations in preference to others; for Captain Sturt observes that he took its appearance to be a sure sign of his approach to a country more than ordinarily subject to overflow; since, on the Macquarrie and the Darling, these birds were only found to inhabit the regions of marshes, or spaces covered by the *Acacia pendula*, or the *Polygonum junceum*. . . . It frequently assembles in very large flocks, and when it visits the lagoons or river-sides for water, during the dry seasons, generally selects a single tree, or even a particular branch, on which to congregate; very great numbers, perching side by side, and all descending simultaneously to drink: so closely are they packed while thus engaged, that I have heard of dozens of them being killed by a single discharge of the gun. Its powers of flight are so rapid as to be unequalled by those of any member of the group to which it belongs; an impetus being acquired by a few quick flaps of the wings; its going, skimming off apparently without any further movement of the pinions. Upon alighting on a branch, it elevates its tail and throws back its head, so as to bring them nearly together, at

inferior description growing on the top of them; I never saw this before, and hoped to obtain water by sinking, but all our efforts were useless.

There being so slight a prospect of water ahead, the same time erecting its crest, and showing itself off to the utmost advantage.

"I met with the nest of this species in a low tree, on the great plain near Gundermain, on the Lower Uamoi, on the 23rd of December, 1839; like that of the other species of pigeon, it was a slight structure of small twigs, and contained two white eggs, which were one inch and a quarter long, and nearly an inch broad, upon which the female was then sitting.

"The sexes are alike in plumage. Head, face, throat, breast, and abdomen, grey; lengthened occipital plumes, black; back of the neck, back, rump, flanks, upper and under tail-coverts light olive-brown; the upper tail-coverts tipped with white; sides of the neck washed with pinky salmon-colour; feathers covering the insertion of the wing deep buff, each crossed near the tip with a line of deep black, giving this part of the plumage a barred appearance; greater wing-coverts shining bronzy green, margined with white; primaries brown, becoming of a deeper tint as they approach the body, the third, fourth, and fifth, finely-margined on the apical half of their external web with brownish-white, the remainder with a narrow line of white bounding the extremities of both webs; secondaries brown on their inner webs, bronzy purple on their outer webs at the base, and brown at the extremity, broadly margined with white; two centre tail-feathers brown, the remainder blackish brown, glossed with green on their outer webs, and tipped with white; irides buffy orange; orbits, naked, wrinkled, and of a pink-red; nostrils and base of the bill, olive-black; tip, black; legs and feet, pink-red." (*Gould's Birds of Australia*, vol. v., plate 70.)

I did not like to take the party farther away from the clay pans on which we had camped on the 31st.

5th.—Left the camp standing. Took Lewis and started west, for four miles through level scrub country between sand ridges; five more through a burnt, bare casuarina forest. Two miles farther a slight but extensive depression under a sand ridge. Here the vegetation was exuberant, tea-tree (*Leptospermum* or *Melaleuca*), spinifex, and scrub; searched all over it diligently for water, but found none; in fact, surface water cannot lodge on this country much longer than ten minutes, it must sink through the sand. This was a place which evidently received such excess of water as the surrounding country could not at once absorb, but it held none within our reach. We continued our journey; country slightly changing, and apparently improving. Camped, after doing forty miles, under a low stony hill. We were now some few miles within Western Australia; being the first, I think, who had entered that province from South Australia, excepting just on the coast line. I greatly wished to go on next day, but our camels were not over-fresh, and it would have entailed an extra two days' halt on the main party,

and have made it ten days before we could reach our nearest known water.

6th.—Ascended again the hill under which we had camped. The setting sun of the previous day had painted the prospect ahead in fairer colours than the reality of the rising sun confirmed, and I had less reason to regret my inability to go forward. The Table Mountain which I had visited on the 25th ult., was visible at eighty or ninety miles' distance.

Reached the camp at 7 p.m. The only result of our eighty-mile ride being a conviction that for the present, at least, we must return to the clay pans of the 31st ult., and, if dried up, then back to the dépôt creek.

7th.—The morning broke with an appearance of rain, but it will do us little good beyond what we can collect in a tarpaulin. As usual, when most wanted, ten camels had strayed back on the track and delayed our start.

Rain came on in the afternoon when we were on better holding-ground, and enabled us to water the camels. On to camp at eighteen miles.

Sunday, 8th.—Continued on our back-tracks. All the surface water of the previous afternoon was dried up, and there was a cold south-easterly

wind all day. Ascended a hill a few miles off the track, to examine what appeared a distant range to the northward, running east and west. We thought very favourably of it, and hoped to make west again into West Australia by its aid. Camped at the place where we had been on the 2nd.

9th.—Started for the range seen yesterday; found some clay pans, and watered the camels. Sunk some holes for the water to drain into, should we again have to come back.

After travelling fourteen miles, we unexpectedly struck a short creek running east and west; it had plenty of water from the late rain, this will give us a depôt, should the range prove unprofitable.

10th.—Proceeded down the creek; it had a good holding bottom of indurated clay and sand, with plenty of water, and many native wells. But it ran out in a couple of miles, and lost itself in a flat. We continued towards the range, which we reached in the evening, and found to be worthless, consisting only of low broken hills standing on very high ground. There was no sign of water, except the sight of two wild dogs.

11th.—Returned to camp of the 9th, examining the country right and left for water, without success.

12th.—Halted to-day, in order to rest the camels and prepare for an eight days' trip to the northward.

13th.—I started with my son and Charley towards a prominent bluff in the range, seventeen miles distant; the ground as we approached appeared to improve in its firmness, but the rain had run off it into a flat that would not hold. We looked in vain for water, and, ascending the bluff about 350 feet high, the prospect all round (except where we had come from) was far from exhilarating; a flat, sandy, scrubby country, lightly dotted here and there with clumps of casuarina, and covered with the never-failing spinifex, was all that could be seen. There were, however, natives in the neighbourhood, but we cannot get near them, and they won't come to us. They must have water somewhere, but we can find no trace of it.

14th.—North course twenty-four miles; camped under a sand ridge. On our way we surprised three blacks, who fled from their camp at our approach. They left their fire burning, and their

weapons behind them. We took a Boomerang for Charley, and left a piece of blanket in exchange.

15th.—Travelled twenty-eight miles through thick spinifex, a most hopeless country indeed.

16th.—Travelled thirteen miles north; the spinifex thicker than ever, and covering the whole country as far as could be seen. Found a few small Leichhardt trees for the first time. It being useless to fatigue the camels by taking them any farther through this interminable spinifex, we camped, and decided to retrace our steps next day. We had travelled eighty miles due north, and the country was getting worse and worse.

17th.—Returning.

18th.—Returning. Caught sight of a *Lubra* (a native woman) with a small boy and an infant. My companions gave chase, but their camels did not like leaving the track, and would not step out; they bellowed lustily, which made the woman run faster; she tossed away everything but the baby, and escaped. Charley, however, captured the lad, who showed not the slightest fear, but looked at us and our camels as if quite accustomed to the sight. We put him on the camel, in front of Charley, and made signs for him to show us where we could find water. Even this unusual exalta-

tion and mode of progression did not seem to frighten the urchin, who kept chattering and pointing to the west. We turned in that direction, but before we had got far Charley's sharp eyes detected some diamond-sparrows⁶ rising from the

* "No species of the genus to which this bird (*Pardalotus punctatus*, or *Spotted Pardalote*) belongs is more widely and generally distributed. It inhabits the whole of the southern parts of the Australian Continent, from the western to the eastern extremities of the country, and is very common in Van Diemen's Land. It is nearly always engaged in searching for insects among the foliage, both of trees of the highest growth and of the lowest shrubs; it frequents gardens and enclosures as well as the open forest; and is exceedingly active in its actions, clinging about in every variety of position both above and beneath the leaves with equal facility.

"With regard to the nidification of this species, it is a singular circumstance that in the choice of situation for the reception of its nest, it differs from every other known member of the genus; for, while they always place their nests in the holes of trees, this species descends to the ground, and, availing itself of any little shelving bank that occurs in its vicinity, excavates a hole just large enough to admit of the passage of its body, in a nearly horizontal direction, to the depth of two or three feet, at the end of which a chamber is formed in which the nest is deposited. The nest itself is a neat and beautifully built structure, formed of strips of the inner bark of the *Eucalypti*, and lined with finer strips of the same or similar materials; it is of a spherical contour, about four inches in diameter, with a small hole in the side for an entrance. The chamber is generally somewhat higher than the mouth of the hole, by which means the risk of its being inundated upon the occurrence of rain is obviated. I have

ground, and he immediately ran off to look for water.

He found a native well with some water, and

been fortunate enough to discover many of the nests of this species; but they are most difficult to detect, and are only to be found by watching for the egress or ingress of the parent birds from or into its hole or entrance, which is frequently formed in a part of the bank overhung by herbage, or beneath the overhanging roots of a tree. How so neat a structure as is the nest of the Spotted Pardalote, should be constructed at the end of a hole where no light can possibly enter, is beyond our comprehension, and is one of those wonderful results of instinct so often presented to our notice in the history of the animal creation, without our being in any way able to account for them. The present species rears two broods in the course of the year, the eggs upon each occasion being four or five in number, rather round in form, of a beautiful polished, fleshy white, seven and a half lines long by six and a half lines broad.

"Its voice is a rather harsh, piping note of two syllables often repeated.

"The male has the crown of the head, wings, and tail, black, each feather having a round spot of white near the tip; a stripe of white commences at the nostrils, and passes over the eye; ear-coverts and sides of the neck, grey; feathers of the back, grey at the base, succeeded by a triangular-shaped spot of fawn colour, and edged with black; rump rufous brown; upper tail-coverts, crimson; throat, chest, and under tail-coverts, yellow; abdomen and flanks, tawny; irides, dark brown; bill, brownish black; feet, brown.

The female may be distinguished by the less strongly contrasted tints of her colouring, and by the absence of the bright yellow on the throat." (*Gould's Birds of Australia*, vol. ii., plate 35.)

we soon saw another close by. This discovery caused us immense joy, for we saw the water draining in as fast as we drew it out, and we thought we had now got the key of the country and would be able to get water by sinking in any suitable flat. The lad only indirectly benefited us, as he was going past the wells, but we here offered him some food, and let him go ; he refused to eat, and sneaked away, thinking, no doubt, how cleverly he had eluded us, when he got out of sight. Watered the camels and filled our bags, then went on our way rejoicing that our long ride had not been useless. These we named the " Waterloo Wells."

[The native wells, on the discovery of which so often hung the lives of the expedition, and owing to which they were eventually successful in crossing the continent, would hardly come up to an English reader's preconceived notion of a well. They were little holes sunk in the sand with a slight curve, so that the water was often invisible from the surface, and being thus shielded from the burning sun, the evaporation was less, and the liquid cooler. The average depth of the wells was about five feet, though some attained a much greater magnitude. It would be easy to pass within half a dozen yards of these precious reservoirs by daylight and not perceive them, whilst at night their discovery was quite impossible. It is curious to speculate on the instinct that enables the degraded inhabitants of this wilderness to find the few

spots where the precious element is attainable. The savage has the advantage of the European in this respect. Out of forty-nine or fifty attempts made by Colonel Warburton's party to find water by sinking, only one was successful, although in the selection of likely spots they brought all their experience and desert-craft to bear. How often, when travelling in the dark, and perishing from thirst, they may have unconsciously passed wells, a knowledge of which would have been as new life and strength to both man and beast, it is impossible to say.]

19th.—Returning to main camp.

20th.—We made a *détour* round the bluff range to look on all sides of it for water, but found none. Reached our *depôt* on "Ether Creek" in the afternoon.

21st and 22nd.—Spent these days resting our three camels and preparing to start for the wells. Lewis had been up the creek, which he found spread out into flats and got lost, then picked itself up again, and became a creek once more. This being the case up the creek, I thought probable it might be the same down it, but on examination this proved not to be so; it was finally lost in the flat to which we had before traced it.

23rd, 24th, and 25th.—Returned with the whole party to Waterloo Wells. We enlarged,

cleared, and deepened them, getting an abundant supply of delicious water. Sahleh, one of the camel-men, was now very ill with scurvy; the other one is also lame and ailing, but not so bad. Towards evening Sahleh made his will, which he dictated to me in Hindustanee.

26th.—Sahleh is no worse to-day, but he won't allow that he is any better. The two wells which we cleared and enlarged yesterday have an abundant supply of water; they have sufficient for a depôt, should we be driven back again in our endeavours to cross this high table-land; but I hope we shall not be compelled to use them.

We started at 10 a.m. towards the west. After five miles' march we turned north-west, across a sand ridge; the country becoming slightly undulating with low hills visible to the north-west. Camped at 4 p.m., after travelling eighteen miles, between two widely separated sand ridges. Spinifex, scrub, and sands as usual.

27th.—I sent the camels on, and went with one companion to the top of a small ironstone hill; the view was anything but cheerful. Found two stone slabs marked, and a round stone hidden in a hole on the top of the hill; brought them away

as curiosities. Heard a wild dog in the night,⁷ but found no water.

[These slabs were thin, flat stones, measuring about fifteen inches by six, of an oblong shape and rounded at the ends. They were marked with unintelligible scrawls, and were secreted in a hole from whence Colonel Warburton ferreted them out, in company with a spherical stone about the size of an orange. No clue could be gained as to what they meant, or why they were deposited there. Unfortunately these interesting objects had to be thrown away before the termination of the journey.]

28th.—Cloudy; a few drops of rain fell.—
Travelled seventeen miles in a north-westerly

⁷ The wild dog or dingo is a pretty sure sign of water, for these animals are rarely found far from its vicinity. This animal, the *Canis Dingo*, is admirably figured in Gould's "Mammals of Australia." It is not regarded by Mr. Gould as indigenous to the Australian Continent. He believes, on the contrary, that it has followed the Black Man's wanderings from Asia, through the Indian Islands to Australia, the southern portion of which appears to be its limits in that direction. From what he saw of the animal in a state of nature he could only regard it as a variety, to which the lapse of ages had given a wildness of air and disposition; it has, in fact, all the habits of a skulking, low-bred dog, and none of the determined air or ferocity of the wolf or jackal. It is of about the size of an English fox-hound, and affords considerable amusement to the Nimrods of Australia, who hunt it precisely as the fox is hunted in England. The dingo, like all dogs in a state of nature, never barks, only whines, howls, or growls.

course. The country to-day has been improving, if tea-tree plats be an indication of water. At 3 p.m. we crossed a stony ridge, and camped in a tea-tree plat, where we expected to find as much water as we wanted; but on sinking we were soon undeceived—there was none.

Sunday, 29th. — Cloudy. We deepened last night's well, but with no better result than yesterday. Started in a north-westerly direction and sunk another hole near a sand-ridge, but found no water. Went on a little way, then turned south-west, as the country ahead gave no hope of water. We then camped, and dug three more wells in different places, all with the same unsuccessful result. We did not make more than five miles to-day, as it was unadvisable to increase our distance from the last known water, already fifty miles away; but we hoped, by digging on the return journey, not to be obliged to go so far back as the Waterloo Wells.

30th.—Whilst at the wells the camels were not thirsty, and would not drink when water was offered to them, so they have had none since leaving "Ethel Creek." Now that there is none for them they want it, and as the feed is both scanty and dry, they wander, and when we parti-

cularly wish to make an early start on their account, they are absent without leave. We started at 11 a.m., on our return—a great disappointment! Dug three more useless wells on the way, and camped at 5 p.m.

July 1st.—Camels again absent. Started at 9 a.m. ; more digging to-day, and no water.

2nd.—Dug two wells on the way—both dry. But we found two native wells at about two miles west of the Waterloo Wells ; they had, however, very little water, and would have required many hours' labour to fit them for our service, so we went on. One of our wells was found in good order, half of the other had fallen in. We fished out the drowned rats and watered all the camels before sunset.⁸

⁸ Rats are very plentiful in Western Australia, where they have their nests in the clefts of the rocks. Nearly a dozen species are figured in Gould's "*Australian Mammals*." Most of them are smaller than the ordinary rat common in England. In the absence of specimens of the animals or their skulls, Professor Owen has been unable to determine whether these rats may have been true *Murinae*, or rat-like Marsupials, such as belong to *Hapalotis*, *Antechinus*, *Dromicia*, and other genera. With regard to the paucity of Mammals met with by Colonel Warburton, Professor Owen remarks that most of the species are nocturnal in their habits, and that the few seen or caught by day may give an erroneous or inadequate idea of the Mammalian life of the tract explored.

3rd.—Sahleh is so very ill that I must remain here several days to give him a chance of his life.

4th, 5th, and 6th.—Sahleh has been nearly dead; he has lost the use both of his legs and arms; cannot move; can scarcely speak, and cannot take any food but rice-water. He is utterly powerless, and unable to travel unless I strap him on to a camel like a bag of flour, and this would probably kill him; so I shall remain here, and send out a reconnoitring party to-morrow.

7th.—I sent Lewis and Dennis with three camels, a good supply of water, and ten days' provisions. Lewis' instructions are to hunt and dig for water in any likely-looking places, in any direction except one with easting in it.

I think Sahleh looks a little better to-day.

8th.—Sahleh looks worse; he is in a critical state, and must either mend or die. We have nothing but citric acid to give him; he cannot eat.

9th and 10th.—Sahleh is certainly better; we have discovered a small yellow berry in the scrub, which, after proving it not to be poisonous, we have made him eat.

11th and 12th.—Ice a quarter of an inch thick in the buckets in the morning.

13th.—Induced a black to come to our camp, but he trembled with fright, particularly when he saw the camels.

14th, 15th, and 16th.—Sahleh fast recovering. Lewis ought to be back to-day.

19th.—Lewis is not yet returned, and I am getting anxious about him. Six natives came to the camp, but we could not understand each other. We watched these scamps with the utmost care and closeness, as we thought, but they were too much for us, and stole an axe; this of course put an end to their visits. These blacks had been seen prowling about in the neighbourhood of the camp, and, by means of shouting and beckoning, were induced to visit it. They were fine, well-made men, most of them bearded, and, considering the wretched hand-to-mouth life they lead, were in very fair bodily condition. Clothing they possessed none; they were armed with spears and waddies, or short clubs, the latter of which they use to knock over the wallabies, a small species of kangaroo, on which they seem mainly to subsist.

After sunset Lewis returned, to our great relief. He brings good news, having found a place 100 miles distant, where water is procurable by digging.

This is all we want, and gives us another secure step in our journey. He went forty miles farther westward, and came upon a dry salt lake; I shall be careful to round this to the northward.

Sunday, 20th.—A happy day, at the prospect of leaving this place to-morrow.

In the evening, our native, Charley, who shepherds the camels, reported that three had run away southward. He had followed the tracks for several miles, and one camel had broken its hobbles. This was bad news, but Halleem, the camel-man, requested to be allowed to go after them, and said he would bring them back. I lent him "Hosee," my riding camel, and he started a little before 5 p.m. I expected him to push on five or six miles, then camp for the night, and to run the tracks smartly at daylight on Monday, when he would overtake the runaways and bring them back by midday.

21st.—Looking every moment for Halleem and the camels. Sahleh, who had been seen walking in the vicinity of the camp with a gun, returned in the evening with the astounding intelligence that he had seen "Hosee's" *return* tracks, coming near the camp, and then branching off to the northward of east; he professed to be intimately

acquainted with the tracks of each camel, and quite able to distinguish one from another. This alarming news threw us into a maze of perplexity and doubt.

It was now also told me for the first time that Halleem was occasionally subject to fits, which rendered him quite unconscious of what he was doing, or where he was going. This made the matter worse, as such a man was unfit to be trusted alone, and it became a question whether Halleem had lost his camel or his wits; the latter seemed to me the more probable, as I could not believe that Hosee would come so near the other camels and not join them.

22nd.—I sent my son and Charley with a week's provisions on our back-tracks, to try for Halleem first; but, in the event of not finding his *foot* tracks, to continue on, and endeavour to recover the camels. Lewis also went in the other direction, to run up Hosee's tracks, so that I hoped that by one or other of these means I should learn what had become of Halleem. Unfortunately, Lewis, supposing he had only a few hours' work, took neither food nor water. Now, 6 p.m., it is beginning to rain, and Lewis has not returned. I know he will stick to the tracks as long as he can,

but I wish he were back ; if Halleem be demented, he may urge the camel on sixty or seventy miles without stopping, and thus get a start in his mad career that will make it impossible for Lewis to help him.

23rd.—It has rained lightly all night. Lewis is still absent ; I am greatly grieved at his having nothing to eat.

1 p.m.—Lewis returned ; he had camped with Richard, and so was all right.

It appears from his report that Sahleh, whilst out “birding,” must have stumbled upon a mare’s nest, for Lewis soon abandoned the track he started on, and turned after Richard to find Halleem’s first camp. They did not find this, but they fell on his tracks of next day, steadily following the runaway camels ; it is clear, therefore, that Sahleh has done his countryman some injustice, and caused much unnecessary alarm. His mistake, however, has done good, for a second party is now out with food, which will relieve Halleem (when they find him) from starvation. Richard returned, having seen Halleem, and promised to take out provisions to meet him on his return.

24th.—Stormy ; clouds and light rain. Found

several more wells a short distance north of our camp. We must have passed close to these on the 18th June without seeing them ; it is scarcely possible to find these unmarked holes without some clue.

25th.—Cold, wet, and stormy ; rain all night.

26th.—The weather cleared up. Sahleh shot an emu (*Dromaius Novæ Hollandiæ*)—a welcome addition to our larder. Every scrap of this bird was eaten up except the feathers. The liver is a great delicacy, and the flesh by no means unpalatable.

27th and 28th.—Sent provisions to Ethel Creek for Halleem.

29th.—The camel-hunters returned in the evening, but without the camels. This is a double loss ; the camels are gone, and so is our time ; our means of locomotion are much reduced, whilst the necessity of getting on is greatly increased. Halleem has, however, done all he could do ; he followed the camels nearly 100 miles, but as they travelled night and day, whilst he could only track them by day, he never could have overtaken them. No doubt these animals will go back to Beltana, where alarm will be created as soon as they are recognized as belonging to our party.

The bolting of the camels was caused by a young

bull, who cut off two cows and drove them away before him.

I had hoped to have been close to Perth by this time; how greatly have my expectations been disappointed! Difficulties and delays have beset us ever since the 23rd May, and but for these we should have been near our journey's end, for though we have not progressed, we have one way with another ridden 1700 miles.

30th.—Lewis, when last out, sunk a well about twelve miles from here, the only one out of nearly fifty in which water was procured. We started for it to-day. After deepening the well and cleaning out dead rats, we had not time to get the water before one whole side fell in, and the work had to be done over again. I hope we have now bid a final adieu to the Waterloo Wells; they have been as a city of refuge to us in our distress, but one does not wish to reside permanently in a city of refuge, however pleasant a short stay may have been. The day has been cloudy and threatening rain.

31st.—Travelled eighteen miles west-north-west. Bad ground and sand-hills. Weather cloudy, with a few drops of rain.

August 1st.—We continued the same general

course for seventeen miles. Weather very sultry ; rain seems to be near. The spinifex is so slippery the camels cannot keep their footing on it. Rain in the morning, and continued all night.

2nd.—Raining still, so we did not move, and are thankful for it. It cleared up in the afternoon ; the clouds are very low, and there was a fog at night.

Sunday, 3rd.—Halted for the day.

4th.—The camels were away in the morning, and we made a late start. Accomplished twenty-one miles in a direction a little north of west.

5th.—Travelled towards Mary Springs, passing a fine rock-hole, with water. Mount Russell, an isolated hill of no great altitude, but a good landmark for finding the rock-hole, lies south-west from the water, distant about twelve miles. Mary Springs is a notable place ; it is the nearest permanent water on the boundary. The supply is abundant and easily got at, in a sandy gully between two sandstone hills. Unfortunately I have lost the book containing the calculations of astronomical observations, but to the best of my recollection the variation of the compass was so slight at Mary Springs (under thirty minutes) as to justify the belief that the line of no variation

runs very close to that place. This is the third time we have crossed into Western Australia; I hope our footing there is at last secure.

6th.—Pursued a north-west course for fourteen miles. Camped early, in consequence of finding tracks of natives, which gave promise of water not far off. Found a shallow clay pan about two miles to the west of our camp. We found good feed here for the camels, but the sand-hills appear to be increasing in number and size. We have got amongst the half-dried salt lagoons, so our further progress north-west is cut off. We must keep clear of these, or they may drive us still farther north.*

7th.—A camel calved this morning. We cut the calf's throat and deferred the start till the afternoon. This is our second calf; the camelmen ate the first at Waterloo Wells. We started with full water-bags from the clay pan. Halted close by a salt lagoon, the edge of which looked as though we might get water by sinking. We are quite amongst salt lakes—a large one lies

* The salt lagoons are large open tracts, either wet or filled with mud, crusted over with a saline deposit. It is by no means necessary that the country should be depressed where salt lakes exist, for they are often found on elevated tracts of land.

to the westward of us, sending out its arms to every point. We must round the eastern end of them, as camels and salt bogs do not agree at all. The country in no respect so good as yesterday; still I hope to find a clay pan here and there.

8th.—We tried to cross the salt lagoon, but had to turn back. Went thirteen miles. Country is very bad—dense spinifex, high, steep sandridges, with timber in the flats, and nothing but the bushes that camels eat. Any man attempting to cross this country with horses must perish.

9th.—Travelled fifteen miles northward and westward. A strong easterly wind prevailed, blowing up clouds of sand and ashes from the burnt ground. Truly this is a desert! We camped on a salt lagoon, on the south side of which water was procurable, but it was quite salt.

Sunday, 10th.—Continued towards the northwest, to an isolated hill. Country opening out. Reached the mount at 12.30 p.m. We had great expectations of this place, but distance had deceived us—the hill is rubbish, and we obtained no hopeful view from it. There are signs of natives on some yam-ground near it. From this place we continued our course towards an ap-



The Dust Storm.—Under the Lee.

parent gap in a broken basaltic range, and camped near it.

11th.—I sent three parties out to look for water in different directions. Countless thousands of shell and other small parrots flew over the camp, disturbed by the riders. Our water-searchers returned in the afternoon unsuccessful, those who had examined the range pronouncing that part of the country hopeless for water. We were, however, induced to think there must be water somewhere in the direction taken by the third searcher, as he reported having seen flock-pigeons. He may have been mistaken, and the chance would have led us farther from the last water; so we should run the hazard of losing time and lengthening the distance, should our opinion prove wrong. I sent two men in the evening on our back-track, to see if they could trace to water the natives whose yam-digging marks we had seen yesterday at Yam Hill. This is our last chance; if it fail, we must go over those terrible sand-hills again to our last water! It will ruin the camels, and place us in an ugly predicament, but there is no alternative. I dare not work them on a chance. What they can do must be all on a certainty of getting water at the end.

12th.—I took the party on our back-tracks to meet those I sent out yesterday evening, and found them at breakfast near Yam Hill. They had tracked the natives to their camp, near which they had a well. This is a blessing indeed to us. I had a perfect dread of again crossing the frightful desert we had got over. I trust that all may now be well with us for the present. The camels must have some days' rest, as they have not had their weekly spell for a long time.

13th.—Halt.

14th.—We ran up some blacks' tracks for twelve miles, discovered their well, and camped near a bluff. Found afterwards two other wells not far off.

15th.—On rounding the bluff a high hill came in view in front of us, towards which we travelled over pretty easy ground, which had been burnt. Near the bluff the country presented a more hopeful appearance, but it soon fell off into sandy desert. Camped about fifty-two miles south of the hill.

16th.—We had scarcely travelled five miles to-day before a thick smoke arose close before us. How the blacks let themselves into this trap I don't know ; they never would have set fire to the

country had they seen us so close. Of course they paid the penalty of their carelessness, for we soon invaded their camp and took possession of an excellent well. This gave me an opportunity of fixing the camp for some days, whilst my son and I went out to see if we could find any break in the country to indicate the vicinity of Sturt Creek, discovered by A. C. Gregory in 1856. We started in the afternoon, and camped under a hill. Unfortunately my rough book, in which I worked my observations, has been lost, but I remember taking a lunar, which gave a longitude within four or five miles of that by account. I therefore concluded we must be somewhere near the salt lake into which Sturt Creek empties itself; and as this lake is stated to be only 300 feet above the level of the sea, whilst the barometer and our own convictions told us we must be on very high land, I had expected to find some very marked depression in the country.

17th.—Ascended the hill, but could see no sign at all of Sturt Creek or the lake. As far as eye could reach high land alone was visible. We had long been on elevated ground and were now on a high hill, but there was no fall in the country such as required by a lake on a low level. Went part

of the way back to camp, having neither food nor water for further search.

[Colonel Warburton and his companions had now arrived within a very few miles of Mr. Augustus Gregory's farthest on the 5th of March, 1856. The series of hills to which Mount Wilson belonged are described as only eighty feet high, and might therefore have been easily overlooked. However, the fact remains that Colonel Warburton had penetrated and pushed his way through an arid wilderness that had baffled even so intrepid an explorer as Gregory. The latter, after viewing the country from the summit of Mount Wilson, says, "As the whole country to the south was one vast desert, destitute of any indications of the existence of water, it was clear that no useful results could arise from an attempt to penetrate this inhospitable region, especially as the loss of any of the horses might deprive the expedition of the means for carrying out the explorations towards the Gulf of Carpentaria." Accordingly he turned back, which was by far the most judicious course he could have adopted. With horses only any attempt to push south would probably have terminated fatally for the explorers. Warburton, provided with enduring camels, was enabled to traverse ground that had hitherto remained a sealed book to Europeans, and though he did not actually sight either Mount Wilson or the Salt Lake, yet he could only have been eight or ten miles distant from them, and may be said to have virtually connected Gregory's farthest with the centre of the continent. Had his expedition achieved nothing more than this, it would have rendered great service to geography.]

18th.—Returned to our standing camp. A

reed-topped spear and an old iron tomahawk had been found in the camp of the natives, apparently significant of Sturt Creek not being very far off.

19th.—My son and I started again north by east towards a high-looking range, in search of some signs of Sturt Creek. Travelled twenty miles over a most desolate, burnt country. Camels will eat almost all sorts of scrub, but we had difficulty in finding a mouthful for them here, and we ourselves were tormented all the afternoon and night by small black ants. We could get no firewood, so altogether had a pretty miserable time of it.

20th.—Continued our course towards the range, a gale of wind blowing the dust and ashes of the burnt ground in our faces. To our surprise, after travelling about seven miles, we struck a gum creek with good trees but no water. We had never anticipated such a find in such a vile country, but it did us no good. Reached the range and ascended the highest point, but there was no probability of such a lake as we were looking for. All was high table-land. Camped under the range.

21st.—We followed the gum creek through the range and ran it up to its head. Not a drop of water! Rode all day in different directions, look-

ing for signs of the lake, but in vain. Returned to the west side of the range through a long, bad gap, and camped near the same place as yesterday. We could not afford to spend any more time looking for the lake, and I presume there must be some error in the longitude. The Basaltic hills, looking very high from a distance, were there, but they were worse than useless, having no water near them.

I had been under an impression that these "fine Basaltic ranges," as they are called by Baron von Mueller, would lead us into a better country, but I was disappointed. Whatever they may be in good seasons, they are as bad as they could be now, and there is more hope of water in the sand-ridges than amongst these hills.

22nd.—Returning to our standing camp, we came upon some soft boggy ground on which the camels would not put a foot. It is a surface-water channel branching into the gum creek. In good seasons there must be water about, and I dare say we might have found it by digging, but we had no spade. It was dry enough for horses, but the camels would not cross it. Our return line was over a better country, and we camped within a few miles of our companions.

23rd.—Reached the standing camp.

It would appear now that we were about ten miles east of the dry Salt Lake into which Sturt Creek empties itself. The sand-hills prevented our seeing it.

Sunday, 24th.—Halt.

25th.—Proceeded west-south-west, five miles, to a native well found by Lewis during our absence.

26th.—Thirteen miles west by south, to a well in black soil. It was a strong spring. We dug dogs' bones out of it, and when cleared it was a fine well. As far as we could judge the water is permanent.

27th.—Eighteen miles west. Ascended a small hill, hoping to see something cheerful. We were disappointed, but still I know there is no dependence to be placed on a cursory view from a height. The country may turn out better than it looks.

28th.—Travelling west. Lewis found a plot of ground where water was procurable at about a couple of feet. This would have been a fine place had we been in want of water, but we had some with us, and our great anxiety now was to get on. Crossed a large plain and saw, for the first time, flock-pigeons. They were very wild, and we could only kill three or four. These pigeons are excel-

lent eating. We have accomplished eighteen miles to day, and hope, from the change in the country, and the pigeons, to find something good soon.

29th.—Sent Lewis south of our course to examine a likely-looking place, and took the rest of the party fourteen miles west, camping between sand-ridges. Lewis, on his return, reported having found a glen and a beautiful pool of water. I had made preparations to go to this place, but in the evening, the existence of a lake ahead of us being reported, I thought it better not to go backward. I give the following extract from Lewis's account of the place he found, which I have called "Bishop's Glen :"—

"After travelling six miles, we reached a beautiful clump of large gum-trees, growing in a swamp at the bottom of a small creek, which was hemmed in by a high sand-hill, and then ran through a rocky ridge in which there were fine, clear, deep water-holes 100 feet in circumference. The green foliage of the gum-trees contrasted pleasantly with the red sand-hills on either side, and the barren, rocky ridge in front. Bustard, bronze-wing pigeons,¹

¹ "The Bronze-wing Pigeon (*Peristera chalcoptera*) is so generally distributed in Australia, that the colonists of every settlement have found the surrounding country inhabited by this fine bird. Specimens from Port Essington, Swan River,

owls, and other birds were seen in the glen, and the whole formed a most gratifying sight after the dreary sand-hill country over which we have

Van Diemen's Land, and New South Wales, differ so little from each other, either in their size or markings, that they must all be considered as one and the same species; the slight differences that do occur being too trivial to be considered as other than mere local variations. It is a plump, heavy bird, weighing, when in good condition, nearly a pound; and its pectoral muscles being deep and fleshy, it constitutes a most excellent viand, and is constantly eaten by every class of persons, being equally acceptable at the table of the Governor and at that of the inmate of a log-hut in the interior of the country. Its amazing powers of flight enable it to pass in an incredibly short space of time over a great expanse of country, and just before sunset it may be observed swiftly winging its way over the plains or down the gullies to its drinking-place. During the long drought of 1839-40, when I was encamped at the northern extremity of the Brezi range, I had daily opportunities of observing the arrival of this bird to drink; the only water for miles, as I was assured by the natives, being in the immediate vicinity of my tent, and that was merely the scanty supply left in a few small natural basins in the rocks, which had been filled by the rain of many months before. This peculiar situation afforded me an excellent opportunity for observing not only the Bronze-wing, but every other bird inhabiting the neighbourhood. Few, if any, of the true insectivorous or fissirostral birds, came to the water-holes; but, on the other hand, those species that live upon grain and seeds, particularly the parrots and honey-eaters (*Trichoglossi* and *Meliphagi*), were continually rushing down to the edges of the pools, utterly regardless of my presence—their thirst for water quite overcoming their sense of danger;

travelled. It was a sight which would well repay a few miles' journey in any country."

30th.—Proceeded thirteen miles north-north-

seldom, if ever, however, did the Bronze-wing make its appearance during the heat of the day, but at sundown, on the contrary, it arrived with arrow-like swiftness, either singly or in pairs. It did not descend at once to the edge of the pool, but dashed down to the ground at about ten yards' distance, remained quiet for a short time, then walked leisurely to the water, and, after taking libations deep and frequent, winged its way to its roosting-place for the night: with a knowledge, therefore, of the habits of this bird, the weary traveller may always perceive when he is in the vicinity of water; and however arid the appearance of the country may be, if he observes the Bronze-wing wending its way from all quarters to a given point, he may be certain to procure a supply of food and water. When rain has fallen in abundance, and the rivers and lagoons are filled not only to the brim, but the water has spread over the surface of the surrounding country the case is materially altered; then the Bronze-wing and other birds are not so easily procured—the abundant supply of the element so requisite to their existence rendering it no longer necessary that they should brave every danger in procuring it.

"The Bronze-wing feeds entirely upon the ground, where it finds the various kinds of leguminous seeds that constitute its food. It breeds during August and the four following months, and often rears two or more broods; the eggs are white and two in number, one inch and three-eighths long, and one inch broad. Its nest, which is very similar to that of the other members of the family, is a frail structure of small twigs, rather hollow in form, and is usually placed on the horizontal branch of an apple or gum-tree near the ground—those trees

west to a fine fresh-water lake—large, but not deep all over. There were plenty of ducks, flock-pigeons,² and parrots. This is indeed a rare

growing on flat meadow-land near water being evidently preferred. This species is very frequently seen in confinement, both in its native country and in England; but I have not heard whether it will or will not breed in captivity. At Swan River it is said to be migratory, and to be met with in the interior of that part of the country in large flocks. At Port Essington, on the contrary, it would seem to be stationary, as Mr. Gilbert mentions that it is found equally abundant in all parts of the country; its nest is there placed upon the branches of the *Banksias*.

“The forehead in some is deep buff, in others buffy white; a line under the eye and the chin, yellowish white; the crown of the head and occiput dark brown, bounded on the sides with plum-colour; sides of the neck, grey; back of the neck and all the upper surface, brown, each feather margined with tawny brown; wings brown, with paler edges; each of the coverts with an oblong spot of rich, lustrous coppery-bronze, on the outer web near the base, the outline of which, towards the extremity of the feather, is sharply defined; tip of each of the coverts grey, fading into white on the extreme tip; two or three of the tertiaries with an oblong spot of lustrous green on their outer webs at the base, bounded by a narrow line of buff; two centre tail-feathers, brown; the remainder deep grey, crossed by a band of black near the tip; under surface of the wing and inner edges of the primaries and secondaries, ferruginous; breast deep vinaceous, passing into greyish on the centre of the abdomen and under tail-coverts; irides dark reddish brown; bill, blackish grey; legs and feet, carmine-red.” (*Gould's Birds of Australia*, vol. v., plate 64.)

² Several species of Australian pigeon congregate in im-

treat to us, and, considering the present size of the lake, it must be very large (for fresh water) in a season when three months' tropical rain has fallen.

31st.—Halted for the day. Shot all we could, but the lake is too large for good sport.

September 1st.—We left the lake, and at four miles west-north-west found another; this second was circular, with beautifully clear, fresh water resting on a pebbly bed. The shelving banks were dry, but there was a considerable body of deep water in the centre. From here we made fourteen miles, with very thick spinifex part of the way.

On the 30th, just before reaching the lake, we had captured a young native woman; this was considered a great triumph of art, as the blacks all avoided us as though we had been plague-stricken. We kept her a close prisoner, intending that she should point out native wells to us; but whilst we were camped to-day the creature escaped from us by gnawing through a thick hair-rope, with which she was fastened to a tree. We were

mense flocks. Besides the Bronze-winged mentioned above, another species, the *Tribonyx ventralis*, visited the colony of Swan River in 1833, in such countless myriads that whole fields of corn were trodden down and destroyed in a single night.

quickly on her tracks, directly we discovered our loss, but she was too much for us, and got clear away. We had not allowed her to starve during her captivity, but she supplied herself from the head of a juvenile relation with an article of diet which our stores did not furnish.

2nd.—West again to-day, eighteen miles over bad sand-hills and rough spinifex. Ran up a smoke, and found a native well. There are hills in sight; those towards the north look high and hopeful, but they are quite out of our course. Other detached, broken hills lie to the west, so our intention is to go towards them.

3rd.—North-west by west, to a sandstone hill, but, arrived at the top, nothing was to be seen from it except several "hunting smokes" in different directions. Found a deep well in a gully some distance up the hill, but we could not use it, for, when cleared out, the sides fell, and it was dangerous for any one to descend.

4th.—Marched six miles west, and found a native camp and a well. Could not catch a native there, they being too quick for us; not far, however, from the camp a howling, hideous old hag was captured, and, warned by the former escape, we secured this old witch by tying her thumbs

behind her back, and haltering her by the neck to a tree. She kept up a frightful howling all night, during which time we had to watch her by turns, or she would have got away also. I doubt whether there is any way of securing these creatures if you take your eyes off them for ten minutes. North of us there is rather a good-looking range, running east and west, with a hopeful bluff at its western end; but I cannot go farther north whilst there is a hope of getting west.

5th.—Made eighteen miles westing over bad country—and no water.

6th.—Followed a general westerly course, eight miles. Smoke being seen a little to the south, we ran it up, and found a camp and well, but could not see any natives.

We let the old witch go. She was the most alarming specimen of a woman I ever saw; she had been of no use to us, and her sex alone saved her from punishment, for under pretence of leading us to some native wells, she took us backwards and forwards over heavy sand-hills, exhausting the camels as well as my small stock of patience. The well we found was in the opposite direction to the one she was taking us to.

Sunday, 7th.—I had hoped for a halt and a good

rest for the camels, but our well turned out badly, being very deep, and containing not enough water for us or for a single camel. We could not find anything better, so at sunset I sent the camels back to our last water, remaining myself with one companion at the camp, in charge of our baggage, and as our last well was not a good one, I fear the camels cannot get back for three days. This not only causes great loss of time, which is the same as loss of provisions, but it gives the poor camels too much extra work. We are now on short allowance of flour, and the camels have more before them than they can well do, so they do not stand in need of additional work by going *back*; there is, however, no help for it.

8th, 9th, and 10th.—I and my comrade remain at camp. At 11.30 a.m. the party and camels returned; there had been much difficulty and hard work in watering them, the supply being scanty, and it took a whole night as well as the day to satisfy them. The heat is now very great, and the camels are suffering from travelling during the day over the hot sand and steep hills; we are therefore obliged to send them on in the evening, but I shall continue day travelling myself, as long as I can get a camel to stand up.

11th.—I started the baggage camels last night under Lewis. My son and I left this morning, and made twenty-one miles of westing, with no sign of water anywhere on the march.

Charley has been taking a turn round our camp, and reports a native well and a camp of blacks about four miles off. I shall start at day-light, so as to surprise their camp, and endeavour to catch one of the natives.

12th.—We reached the native camp, six miles distant, just at day-light, but our black-birds had taken wing. The wells are excellent; shallow, in a sandy hollow, with plenty of water. There is a small salt lagoon near us; it had some ducks when we arrived, but they declined our company. We got a few bronze-wing pigeons. There are two more small soda-holes near us. Baggage started when the moon rose.

13th.—My son and I found two dry wells and a dry tea-tree swamp. We reached our camp after a twenty miles' march. The Leichhardt trees are increasing in number and size. Casuarina trees there are none; oak^s few, but sand-ridges and spinifex continue in unabated vigour. The coun-

^s Probably *Hakeas*, miscalled oaks by the colonists. There are no true oaks in Australia.

try, though very dry, is yet a little more hopeful, and though, perhaps, unable to find wells, we may be able to *make* them. The weather is getting very hot; the natives cannot hunt far from water, we shall therefore turn north-west by north to-morrow, in hope of finding something.

Sunday, 14th.—Having no water to halt upon, we are obliged to move on. Baggage started with the moon; the course variable so as to cross the sand-hills at the easiest slope.

On reaching our camp eighteen miles distant, we found that the advance party had found a splendid well, or rather had made one in a good place; we have reason to be thankful, as this well saves us from going back over the stiff sand-hills we have crossed. The country has not improved, as I had hoped. I shall resume a west course to-morrow; my riding-camel has completely broken down, and could not bring me into camp to-day. She lay down, and we could only get her on her legs again by lighting some spinifex under her tail; but it was of no use, she could not travel, so I tied her to a bush and walked in.

I sent a man to lead in my camel; it is quite clear I must give up day travelling, the camels will be ruined by it.

[Some little explanation of the sand-ridges encountered by Colonel Warburton is necessary, or the reader may be misled regarding them. They varied considerably both in their height and in their distance from each other, but eighty feet may be regarded as an average in the former respect, and 300 yards in the latter. They ran parallel to each other in an east and west direction, so that while pursuing either of these courses the travellers kept in the valley formed by two of them, and got along without much exertion. It was when it became necessary to cross them at a great angle that the strain on the camels proved severe, for on the slopes their feet sank deeply into the sand, and their labours were most distressing to witness. But the chief feature about this inhospitable region is its utter dissimilarity to any other known part of the globe. In Arabia and Africa are found vast tracts of sandy desert where water is unknown and no vestige of vegetation exists, as, for example, in the Great Sahara; though equally inhospitable as regards water, the countless sand-ridges of Central Australia possess this advantage, that they are clothed with many varieties of shrubs and flowers, and with trees, such as acacias and different species of *Eucalyptus*. This not only supplies food for camels, but detracts much from the dismal appearance that bare sand-ridges would present. The shrubs supply nothing edible to a human being, neither do the trees give the smallest indication of water; still they serve to clothe the nakedness of the sterile region in which they grow, and destroy the impression ordinarily conveyed by the term "desert." The truth is that for such a country *desert* is a misnomer, and the more correct term is *wilderness*—a wilderness divested of animal life, painfully monotonous, and portions

of it appearing as though they had recently formed part of the bed of the ocean.]

15th.—Obliged to halt; our master bull camel has eaten poison, and is very ill; this animal is of immense value, not only on account of his great strength, but because without his aid we shall scarcely be able to keep the young bulls in order, and they may run off with all our camels. Our lives almost depend on this sick camel. We have nothing to give the poor beast but a bottle of mustard, and that does not seem to do it much good. I hope a day's rest may help both it and my own riding-camel. At 4 p.m. the young bulls already began to be troublesome, and we are obliged to take extra precautions to keep them fast; the old one seems worse, will not be able to move to-morrow, and I cannot stay longer, for want of provisions.

[In every herd of camels there is found a master bull, who, by his strength, keeps his younger brethren in subjection. These juvenile members of the party are always ambitious of possessing a harem to themselves, and if allowed an opportunity will cut off three or four cows from the main body, and drive them for hundreds of miles at full speed, an event which had already happened

to the expedition on the 20th July. As long as the young bulls are under the management of the master they are quiet enough, but if illness or any accident befall him, they break out of all bounds and become intractable, each one seeking an opportunity of asserting his own supremacy. The anxiety of the whole party when the master was attacked by sickness may therefore easily be imagined, for unless the young bulls were most minutely watched, they would each drive off as many cows as they could get and leave the travellers without any means of transport, or, in other words, leave them to perish miserably in the wilderness. With a marvellous instinct, the young bulls were aware that the master was ailing, almost before it was apparent to the camel-men, and at once showed signs of insubordination by running after the cows. The most stringent precautions were therefore adopted, by watching at night and by knee-haltering, and happily these measures were successful in preventing another elopement.

Mustard may seem rather a curious remedy for poison, but it was the only substance the party possessed strong enough to have any hope of effect on the strong stomach of a camel. It was mixed with water in a quart pot until thin enough to pour out easily, and then tilted down the animal's throat. Perhaps this is the first instance in which Colman's mustard was thus employed.]

16th.—Made fourteen miles west. The old camel is unable to stand, so we are obliged to leave it. We cut a ramp down to the water in the well, that it might get water if it lived.

Passed two small ponds strongly impregnated with soda. We have been obliged to knee-halter the young bulls.

17th.—Progressed fifteen miles towards the west, and reached a well found by one of the camel-men; it is a very poor one. The weather gets hot; this moment it is 104° under my fly.

By lunar distance taken yesterday on the march, our longitude was observed to be $124^{\circ} 30' \text{ E.}$; by account it is $124^{\circ} 37' 0'' \text{ E.}$ Lunars are not much to be depended on, but as the two longitudes come near each other, I think their mean may approximate the truth, and if they don't, no great harm is done.

18th.—Made eleven miles more to the west. Obligated to abandon two riding-camels at our last camp; they could not stir. We at first thought they were poisoned, but it now appears that they have been struck in the loins by the night wind. My son's riding-camel is also struck, it cannot drag its hind legs after it, so we kill it here for meat instead of leaving it to die. What destruction to us! our strongest bull and three riding-camels all gone in a day or so! What is to become of us, if this continue, I know not.

We do our best by covering their backs at night.

The camel-men say the disease is common in their country; that it always comes in the night, and prevails when a certain star is in the ascendant but what star they cannot tell me, and as I am not a believer in the malign influence of the stars it does not much signify.

19th.—Happy to say we have no more sick camels this morning. We started so as to reach a smoke we had seen yesterday about ten miles off. Found a dry well, but the country at times very bad. We jerked our camel-meat as well as we could; but it is very poor food; the animal was old and quite worn out. The travelling these dark nights over such bad ground is necessarily very slow; hitherto I have allowed the sand-hills to be my guide; not only on account of the difficulty of crossing them, but also because the smokes we have seen have been mostly a little north of west; I cannot, however, go any farther with them, as they are running more to the north of west, whilst my proper course lies a little to the south of it; and thus by and by I should have to cross them nearly at right angles, which would be ruinous.

[It may be as well here to insert the method in which the camel meat was cured, and the animal generally disposed

of, for many more than this one were doomed to fall under the knife, and the treatment in every case was precisely similar. The inner portions of the beast were first eaten, not the liver and other dainty parts only, but *all*, every single scrap was greedily devoured, and whenever eating is mentioned, it must be taken *au pied de la lettre*, and not with the loose signification we attach to it in England; to eat a bird meant with the explorer to pluck him and then to eat him *right through*, and to eat a camel meant exactly the same thing. No shred was passed over; head, feet, hide, tail, all went into the boiling pot, even the very bones were stewed down for soup first, and then broken for the sake of the marrow they contained. The flesh was cut into thin flat strips and hung upon the bushes to dry in the sun, three days being requisite to effect the process properly. The tough thick hide was cut up and parboiled, the coarse hair was then scraped off with a knife, and the leather-like substance replaced in the pot and stewed until it became like the inside of a carpenter's glue-pot, both to the taste and to the smell. Nourishment there was little or none; but it served to fill up space, and as such was valuable to starving men, who could afford to discard nothing. The head was steadily attacked and soon reduced to a polished skull, tongue, brains, and cheeks all having disappeared; the foot was much esteemed as a delicacy, though a great deal of time was requisite to cook it to perfection. The method of preparing one is as follows:—Light a good fire some time beforehand, and let the wood burn down to bright glowing embers; cut the foot off at the hock, and scrape and singe as much hair off it as time and appetite will permit of. Having done this, stick the end into the glowing coals, burn it for some considerable time, and then, withdrawing it, place it on its

side on the ground, and strike the other side smartly with the back of a tomahawk, when, if charred enough, the sole will come off, a large flat slab composed of tough spongy horn ; if it refuses to part from the flesh, stuff it into the fire again until it becomes more reasonable. This would seem rather a long process for a hungry man to perform, and the reader doubtless thinks he is now about to reap the reward of his patience, having no further task but to devour the dainty morsel. Not so. Having got the sole off, place the foot in a bucket, and keep it steadily boiling for thirty-six hours ; if your fire goes out, or you drop asleep, of course it will require longer ; then at last you may venture to hope that your teeth—if good—will enable you to masticate your long-deferred dinner.

Out of the whole number of camels killed for food by Colonel Warburton not one threw to the surface of the cooking bucket a single particle of fat. Worn out and diseased, they afforded no more nutriment than is found in the bark of a tree, and yet on such wretched stuff the party preserved their lives for many weeks. Poor as it was, it was their all, and without it they must have infallibly perished.]

Though now relieved from the immediate want of food, we are much in need of the camels ; they suffer greatly from the heat, and cannot travel by day. As I will not move any farther from water on an uncertainty, we have decided in council to halt here to-morrow ; two going out on camels to hunt for water on some tracks of natives we have seen this morning, and two more on foot to search

towards the south. Should both parties fail, then we must try a night march back to No. 86, get all the water we can there, and then press on next night to No. 84.

20th.—It is one year to-day since we left Adelaide! The two parties started as determined upon yesterday; owing to the reduced number (two only) and weak state of our riding-camels, we have been obliged to throw away the tents and most of our private property—keeping only guns and ammunition, and clothing enough for decency. The party on foot returned unsuccessful. They found a well, but could not dig to water, as the sand poured in from the sides faster than they could take it out.

At 1 p.m. Charley returned with news that they had tracked the natives round from north-west to south-west, and found their well. Lewis remained there to clear it out, and I shall move on towards it this afternoon, in time to water the camels.

Those only who have been in like circumstances can rightly estimate the blessing this well is to us; we should have been obliged to go back fifty miles, giving the camels an extra hundred before we could have recovered our present position, and we have

neither time nor strength for so heavy an addition. We ourselves are all quite well, but very hungry. Reached the well at 5.30; it is a very fine one, and we watered all the camels.

21st.—Closely as I am pressed for time, I think it best to remain here a few days. The season is one of drought, the country thickly covered with sand-hills and spinifex, the destructive heat makes it impossible to work our few camels during the day, and it is almost equally impossible to get over this rough ground in the dark. By remaining a few days I shall refresh the camels, and the waxing moon will help us over the ground; unfortunately I cannot make the best of my time, as I cannot use the camels to scour the country round our front.

22nd.—Halt. Our sick camel is not improving much, the others are doing well.

23rd.—Halt. A small bit of hoop iron sharpened at one end, like a chisel, has been found here; I can only suppose it to have been obtained from the kegs, which Mr. F. Gregory abandoned some twelve years ago on his way to Mount McPherson. Two of our party have been away to-day; they have just returned, and report the discovery of a good well about seven miles off.

24th.—Cloudy, with a hot wind blowing; the flies innumerable to-day, which is a tolerably good sign of rain.

25th.—Travelled to-day parallel to the sand-ridges to the well, which we found to be a very good one.

26th.—Progressed nine miles. Richard is ill to-day; indeed we are all more or less afflicted with diarrhoea. The ants are very troublesome.

27th.—Made twelve miles, but met with no water; it is useless to go farther from our last water till we have secured another in front.

The sick camel that had detained me five days has now given in, although it has carried nothing for the last fortnight. Slight as our progress is the work is too hard for the camels, yet they are the most patient and enduring animals. We have now only eight left out of the seventeen we originally started with. A flock of wild geese flew over in the evening from the west; we hail it as a good omen; but our speculations have not as yet turned out very happy ones.


Sunday, 28th.—Halt to-day for the purpose of trying the country all round for water before we turn back; as we must do if unsuccessful. I sent out two of the party to search. The sand-hills

are running us down too much to the north, but we cannot cross them in the dark without great danger to our camels. In addition to the common flies which are quite bad enough, and the ants which nearly eat us up, we have the Australian bee or honey-fly to torment us. These insects stick to one most perseveringly, and though they don't sting, they smell badly, which is perhaps the reason they persist in walking up our nostrils.

Our water-searchers returned unsuccessful. Painful as retrogression is, it is the only safe course under the circumstances in which we are placed, so that in ten days we shall only have made a few miles progress. We are now on very short allowance, and seem to have the prospect of starvation before us.

29th.—Started with the moon. Halted when she sank and went on again in the morning. Reached camp No. 90 by 9.30 a.m. on Monday the 29th. We saw nothing of the knocked-up camel we had left on Saturday, and suppose it had turned aside to die. We crossed the tracks of two natives this morning, and shall endeavour to run them up.

30th.—Sent Lewis and Charley at daylight to follow up the native tracks; Charley returned at



10 a.m. with news of a good well about five miles to the north-west. Lewis stayed at the well to save the camel.

Took the party to the water in the evening; it is by far the best we have seen for months; it is more a rock-hole than a well, though it is certainly fed by a spring.

October 1st.—An immense number of bronze-wing pigeons came to water at this hole, but they are most difficult to get; we are obliged to shoot for the pot as our supply of ammunition will not allow of reckless or doubtful shots.

Our hopes are raised at finding a different class of water, and although it has taken us down to latitude $20^{\circ} 2'$, we must follow its line; our great disadvantage lies in being unable to make any extensive search in our front for want of camels, or to travel by day on account of the heat, which utterly prostrates them; when we move we can't see, when we stop we can't search.

Travelled ten miles west along the flat, then camped, as one of the riding-camels got lame.

Night cloudy, with a suffocating heat; the ants enjoy this weather, the creatures never sleep, and won't let us either.

2nd.—It is very hot to-day, but less cloudy.

Two of the party went out on foot a few miles, and saw several smokes, but no water; the smokes were most probably many miles farther than they appeared to be, and trudging over these hills of loose burning sand is enough to kill a strong well-fed man. A very short walk is all we can manage.

In order slightly to modify the evil of night-travelling we shall go over a few miles in the evening, then sit down and start again as the day breaks, halting when the heat oppresses the camels, and looking for water on the way. By night travelling, without the means of finding water, we are only working the camels for nothing, because the farther we press on the farther we have to go back. Our condition is indeed becoming very serious, owing to our want of provisions. We are placed in this dilemma: if we press forward, we run the chance of losing our camels and dying of thirst; if we stand still, we can only hope to prolong our lives, as God may enable us, on sundried camel flesh.

3rd.—Progressed about five miles farther to the west, but found no improvement in the country so far as we can see. The heat has been most oppressive for the last few days; no wonder the camels are unable to stand it, even we feel it.

To-day it is a little cooler, so we must cease to expect rain.

Those improvident Afghans have consumed all their flour and meat, so I shall be obliged to give them some of our meat. We were all supplied originally with equal quantities, but whilst we have economized our store, they, who profess to be able to do with less than any one else, have now none at all.

Richard, Lewis, and Charley all out, looking for tracks. Our condition is so critical that I am determined, should it please God to give us once more water, so that we may not be compelled to go farther back, to risk everything, and make a final push for the river Oakover. Some of us might reach it, if all could not. I do not imagine the country we are now in is really any worse than that we have come through, but the loss of our riding-camels, and the length of time it has taken us to get through it, has left us without the means of searching, and without food, if we were able to search.

This day completes the year since we left Beltana. Early in the morning there was a moist haze from the westward; by noon a strong hot north-wind sprung up. Lewis and Charley were still

out at sunset. Richard is suffering severely from toothache. Charley returned at 8 p.m.; Lewis remained behind, ill from extreme heat and fatigue. I sent Charley after his supper, on my camel, with water for Lewis.

4th.—Lewis and Charley got back to camp about 5 a.m. It appears that Lewis came upon the native tracks about 11 a.m. yesterday, and supposing the blacks must have left water at eight or nine, he ran the tracks *back*, viz. from south to north, expecting soon to reach the water from which he supposed the day's journey had been commenced. He ran these tracks till 3 p.m. and was then obliged to turn back. It had been very hard work for them both. We started at 6.15, course westward, and camped after five miles' march on the native tracks. Lewis and Charley now continue yesterday's work on camels, and run the tracks southward, that is in the direction in which they are going; and as the tracks were run backwards yesterday a long way without water, we hope it is not many miles ahead. We have just finished all our camel-meat, and there is nothing whatever we can either gather or shoot for food.

There are no signs yet of the country sloping to

lower level. It has been elevated land throughout our whole journey. It has been too cloudy for several nights to take observations. A smoke was seen a little north of west, and I sent an Afghan out to look after it.

Lewis' riding-camel, which has hitherto been one of our best, is fast breaking up, and is no longer fit for work. Lewis had to walk all the way this morning, after his heavy work yesterday on foot. The former camels were struck in the loins, just as horses are struck by the land-wind in India, but this one is diseased in the hips, and quite lame; this is the fifth riding-camel we have lost out of seven.

The Afghan returned, having found a well, but without water, though perhaps a little might be got by deeper digging. He reports it to be deep already, so I shall not trouble it. Charley returned, reporting that they had found a suitable well twelve miles to the south-west. Lewis was obliged to remain at the well, as his camel was knocked up.

Sunday, 5th.—Started at 3.45 a.m.; and reached the well at 8.30. We were obliged to make frequent stoppages from having to cross the sand-hills at right angles. Lewis not there, I don't know where he can be; the well is a very poor

one, and I am much afraid of it ; I had hoped to remain here a day or two, to jerk the camel-meat we require, but I fear we shall find the water quite inadequate to our wants.

Evening. My fears are realized ; the supply of water is quite insufficient. There is another well about two miles off, but it is of the same character, and does not give water enough for one camel. Lewis returned ; his camel had knocked up, and he was trying to get it a little water at the farther well. He had done all that man could do.

We must stay here to-night to test the wells. Killed the lame camel for meat. Lewis slept at the farther well and got all he could for the camel he had with him. We worked at our well all night, taking the water as it came in at the rate of one bucket every three hours ; we contrived, however, during the day and night to give each camel one bucket.

6th.—The well is quite a failure. I sent Lewis and Charley to run the tracks a short way from the farther well. We must try everything, and man can do no more.

Lewis returned in three hours, reporting two more wells, but he could not tell what they might yield ; he sent Charley farther on, to continue

tracking the blacks, in the hopes he might find some better supply of water.

Were employed to-day in cutting up and jerking the camel-meat.

I have determined to send the camels bare-backed to-night to the water at camp 93, which I estimate to be about twenty-five miles east, one half north of me, but owing to the cloudy sky I was unable to take a latitude from that camp. I have tested the well here and find it gives one quart of water in thirty-five minutes, so there is a sufficiency, if the yield do not decrease and the sides do not fall in (as they most probably will), for three men, who will remain here whilst the camels are away. We are reduced to seven camels in all, and three of these are in such a weak state, I have little hope they will be able to reach the water even when bare-backed. I shall send the two casks, and the empty water-bags, so that water may be carried back to any camels we may be compelled to leave behind. The intense heat, and the difficulty of the ground, when added to the poor food and the insufficient supply of water, are quite sufficient to account for the camels failing so quickly, and I know full well that every camel we lose carries away with it one of the hopes of our

being able to save our lives. We are in the hands of God, and there is always hope whilst there is life. I am thankful to say I have neither fear nor fretfulness. I am not afraid of evil tidings. 3 p.m., Richard, Lewis, and Charley returned to camp with hopeful news. The two first had found several wells almost filled up, but with a little water; they sent Charley on to run the tracks, which took him to a well, that, when cleared out, he thinks will water our camels. Water has been given to the two camels which most needed it, and I shall send them all on without loads this evening to Charley's well, which I trust will turn out as good as he thinks it is. The question, however, is quite an open one; it is impossible to tell what these wells may be till we have deepened and tried them; should it turn out sufficient for the wants of the camels, and not run dry after a bucket or two is taken, then indeed it will be a signal blessing to us, saving, not only an extra fifty miles, but probably the lives of two or three camels. Three men go with the camels, four remain here. We may have a little want of water in our camp, but shall be able to get a small quantity from the well two miles off. We have knocked out the bottom of one of our buckets,



Facing the Enemy.

and by sinking it into the wet sand, we are better able to bale out our little drops of water.

7th.—A strong hot wind from the south is blowing to-day. Our camels returned in the evening from water; they had gone off from the well of their own accord straight to a good water-hole, with limestone and sand; this is the first time they ever found water for themselves. All credit be to them for the same. We have a place where we may recruit our camels a little.

8th.—Started with the baggage at 6 a.m. One of the camels, which appeared quite well last night, was scarcely able to stand; for this reason my son and I took it in turns to walk. I had the first turn at walking, and owing to stoppages from loads slipping off at the sand hills, I got ahead of the camels. I lost and picked up again yesterday's tracks several times, at last I lost them altogether, and continued on the course I supposed the water-hole to lie. Suddenly, hearing a slight noise behind me, I turned and beheld nine armed blacks running towards me. We stopped and faced each other about fifteen yards apart; two youngsters poised their spears at me, but I think it was more out of bravado than anything else; for when I advanced upon them, pistol

in hand, they lowered their spears. We became on speaking terms with each other, but without much mutual edification, I fancy.

Whilst they were all jabbering round me, I heard a shot, as I supposed on my right front. It turned out to have been fired from the very opposite direction, and I should have answered the signal, only that, being amongst so many natives, I did not like to lose one of the three charges in my pistol; and perhaps my black friends might have thought that one discharge had exhausted my resources, and be then induced to commence hostilities. I went with them to their camp and got a little water; the women and children would not come near me, but, thanks to my grey beard, the few who were similarly adorned fraternized readily with me. We passed our hands over each other's beards, for what purpose I cannot exactly say, unless it was to assure ourselves that they were not tied on; and after this little formality we were good friends. I continued my walks over the sand-hills on a south-easterly direction, till I thought I must have covered the required distance, then stopped, lighted a fire, and smoked a pipe. I felt much inclined for a little sleep, but the ants would not allow this; so after

several unsuccessful attempts, I determined to go back to the blacks' camp and get some water. Just as I was starting my two comrades came up with Charley, who had followed up my tracks; they brought me some water, and we retraced our steps, for I was far beyond my camp, having missed the turn from the well to which the camels had been sent to the water they had found for themselves. Repassing the native camp, we bartered with the blacks for a wallaby, without which I should not have reached our camp that night, for I was utterly exhausted by heat, hunger, and fatigue. My comrades kindly accommodated themselves to my weakness, and with their help I managed to stagger into camp about 6 p.m.

9th.—A very hot day. This is a good place for the camels, and though time is so important to us we must stay here some days, sacrificing everything to them, as, humanly speaking, our own lives depend upon their ability to get through this desert. We shot some Gular parrots, and bronze-wing and topknot pigeons.

10th.—To-day it is cloudy and cooler. What a relief! shooting away every time we can get near, and eating all we kill: trying to save our last morsel of flour and tea as long as possible: we

know not to what extremity we may be reduced. If our camels were equal to travelling in the day, we might get on, as there would then be a hope of water ; but nothing can be done in the night, and we have not a single animal on which I dare send any one out to look for water whilst the others are resting.

The camel-man reports favourably of the improvement of the camels, but these men always attribute unlimited power to their animals till those powers are called into exercise, and then, when they break down, the failure is attributed to Providence, and not to the simple fact that the poor beasts are done up, and cannot stand the hard work.

There is a small dry clay-pan near this water ; we have not seen such a thing for a long time. I endeavour to eke out my meagre fare with a mess of boiled salt-plant (*salicornia*) ; this is the first place where we have seen it.

11th.—Cloudy and pretty hot ; but I fear rain is as far off as ever. We manage to kill a few birds, and they are most acceptable.

12th.—Still cloudy ; the nights are so overcast that I cannot get an observation. I should have taken a lunar had there been a favourable oppor-

tunity; but, after all, it does not much signify, for I reason, that should a lunar put me more to the eastward than our mapped position, it might create a little despondency; whilst supposing I have not mapped as far to the west as I ought, we shall some day or other get the benefit of the mistake.

Were it not for our starving condition, this delay would be of no consequence; yet, on the other hand, had we plenty of provisions, we could not carry them; we have more things now than we can carry.

13th.—Cloudy to-day, but no rain. The camels seem pretty fresh now, so I shall break ground to-morrow at sunset, and go to the native camp, about three miles distant, towards the south-west; this will save our carrying water for a short distance over the sand-hills. Dennis White is ill; what is the matter with him, or what has caused his illness, I cannot tell; he seems to imagine the salt-bush is at fault, but I think I have eaten more of it than any one else, and have felt no ill effects. Most probably the camel-meat is the delinquent. Got a good latitude by a lucky hit in the middle of the night; Alpha Arietis and Canopus put me in latitude $20^{\circ} 7' 30''$, so I have nearly one

degree of latitude to play upon should want of water compel me to make more southing than my westerly course requires. Half a gale of wind from the south-east.

14th.—Cloudy in the morning, but cleared up at eight o'clock. Dennis White still ailing, but not worse; he has had all the medicine our means afford, and our medical ignorance can prescribe. Fortunately sickness in the bush is rare.

Sent my son and Charley to the native camp, to make the blacks a little present in return for the wallaby, but they had left, taking a west-south-west course. I shall do the same; for as they had their women and children, as well as a lame man on one leg and a stick, with them, they are not likely to have gone away far from water. It is seldom that a crippled native is seen. This man had met with some accident by which the sinew of his leg became contracted. I shall stop at the well to-morrow to fill the bags and casks, and to look for the best course. If we can only get on fifty or sixty miles more to the west, and find a water to rest the camels on once more, I shall make a final push for the Oakover River.

On reaching the native camp at 7 p.m., we found the well choked up with sand from the gale on

Monday. We were roused up at midnight by thunder and lightning, and got everything under cover, and hoped for rain, but none came.

15th.—Cool air in the morning, which we found very reviving to us all. We are weakened by want of food, and the extremely exhausting weather. The well, when cleared, proves to be just sufficient for our personal use, but there is no water for the camels. I sent Charley to run the tracks of the natives who lately left this well; he reported that after running a short distance south-west they turned south-east. Of course, no amount of water to the south-east could be of any use to us, it would only take us farther from the place we are trying to reach. I sent the camels back to No. 98 this evening for water, and shall start to-morrow as nearly west as the sand-hills permit, taking what Providence may be pleased to send us. I dare not take the camels more than fifteen miles from water.

16th.—A strong south-west wind blowing. We started at 5 a.m. towards the west, and crossed the sand-hills, which here run a little south of west. Camped at a distance of eight miles. I think the country we have come over this morning looks drier than any we have had for some

time. Leichhardt trees are again appearing, and they indicate a dry country. I shall halt here to-morrow, and send Charley on my camel to see what hope there may be for us ahead; if there is none, the camels will have only about eleven miles to get back to No. 98. The prospect is gloomy enough, but it may brighten up a little.

17th.—Windy, from the south-east. Sent Hal-leem and Charley on camels to look after some smoke seen yesterday to the north-north-west. They returned in the evening, quite unsuccessful.

18th.—Smokes having been seen in the southward and westward, I determined to have a trial in that direction before turning back. Sent Lewis and Charley out early in the morning.

I took to-day a lunar distance of Pollux, computing the altitude of the moon, which was too low to be got into the horizon glass; this put us in east longitude $123^{\circ} 23' 45''$, a very close approximation to my dead reckoning, which is $123^{\circ} 26'$. Lewis and Charley returned at 8 p.m.; they could find no water, nor could they see any tracks. We are evidently in an evil piece of country, no resource now left us but a return to No. 98.

19th.—Started at daylight, and reached No. 98 at 9.15 a.m. We here feel the advantage of not

travelling very far from our last water, whilst any uncertainty exists of our finding any before us.

One camel-man quite unable to move from a bad leg. He had an old sore on his ankle, and one of the camels struck him upon it last night; it is an ugly wound; I have plastered it as well as I can, and hope it will be better in a few days.

This is Sunday. How unlike one at home!

Half-a-quart of flour and water, at 4 a.m.; a hard, sinewy bit of raw, that is, sun-dried, but uncooked, camel meat, for dinner at 2 p.m. Supper uncertain, perhaps some roasted acacia seeds; this is our bill of fare. These seeds are not bad, but very small and very hard; they are on bushes, not trees, and the natives use them roasted and pounded.⁴

20th.—Got a pigeon, and some flour and water for breakfast. We can only allow ourselves a spoonful of flour each at a time, and it won't last many days even at this rate.

Killed a large camel for food at sunset. We would rather have killed a worse one, but this bull had, in the early part of our journey got a very bad back, and was unable to work for a long time.

⁴ The acacia seeds here mentioned are contained in a long pod, something like the shell of the French bean.

His wound was not quite healed, when we were compelled to load him, in consequence of the loss of our master bull, and so the sore had broken out again, and would have rendered him unfit for work in a day or two; and he might have fallen a prey to the maggots, as a former sore-backed camel did, for they breed in these sores with such wonderful rapidity, and in such prodigious numbers, that they eat the camel up in a short time.

[The number of flies in Australia, and the rapidity with which they breed, are quite horrible. Nothing in the shape of meat can be left exposed for a moment, otherwise a swarm of flies descend and seem to emit living maggots on the flesh. They assail the ears, nostrils, and eyes of the traveller, who is unable to stir without a veil, and in Colonel Warburton's expedition the additional precaution of rubbing Holloway's ointment round the eye had to be taken. Owing to the flies and the impoverished condition of the blood, the slightest abrasion of the skin led to its festering and becoming an ugly wound. A little scratch, that under other circumstances would pass unnoticed, here became a troublesome, ulcerous sore. Some idea of the condition of this camel's back may be imagined when the reader hears that the maggots were *scooped out with a pint pot!*]

21st.—Cutting up and jerking camel-meat. The inside has given us a good supper and break-

fast. This is a much better beast than the old, worn-out cow we killed before, and we have utilized every scrap, having had a sharp lesson as to the value of anything we can masticate.

22nd.—A very hot day. Sent two men out with three days' provisions to look for water to the southward. I hope they may succeed, as they will be able to get to a distance of twenty or thirty miles. It is now a fortnight since we first came to the water; all our efforts to get away have as yet failed; we are imprisoned for the present as safely as we should be in jail, only we are much worse fed.

I begin to think it is just possible we may be stopped here till the summer tropical rains fall in January. The heat is now so fierce, that neither we nor our camels could live long without an abundant supply of water; but such a contingency as this would only be a prolongation of our sufferings, it would not save us. I don't want to go south, for it increases the difficulty of crossing the sand-hills, without diminishing the distance from the Oakover River, but if we can find water, any direction (except east) is better than staying here; we are all sick of the place.

23rd.—Another roasting day.

24th.—A close, cloudy heat; looks like rain.

25th.—A little cooler. All the camel-meat has been successfully jerked, and we have lived since the 20th on bone-broth and gristle. The birds were getting shy, so when we killed the camel we gave them a rest; to-day we go at them again. I hope the water-searchers will return this evening; our prospects are not very bright under any circumstances, but if we get water anywhere between south and west, we shall have a prospect of overcoming the difficulties and dangers that threaten us.

Got a fair bag of Gular parrots to-day; they thought, perhaps, we had forgotten them; I don't think they will stand this fun many more days.

26th.—A very oppressive, cloudy day. Lewis and Charley returned, having found some moderate wells to the southward. They will not advance us towards the river, but we have some southing to make, and we can do it on known water, without which we dare not do much direct crossing the sand-hills, and only by very short journeys. We must stay here a day or two to give rest to the camels that have been out. If we can get to latitude $20^{\circ} 35'$ or $40'$, by easy steps, with water, then we may, perhaps, be able to run from thence on a line nearly parallel with the sand-hills.

27th.—Camped.

28th.—Had hoped to have started this evening, but one of the camels lately out looks in want of longer rest. I dare not move a tired camel from here; they will need all the strength we can give them.

Excessive heat; distant thunder. Took a lunar last night, using Antaris by computed altitude, it being too low for observation. The longitude is exactly to a second the same as the last; a distance of about six miles lies between the two places of observation. The first was taken with a waning moon at 4.30 a.m. by Pollux, east of moon; the altitude of the moon was computed in the first case, that of Antaris in the second. Every argument employed differed in one instance from the other, yet both give exactly the same result, from which I infer that neither are further in error than lunars usually are, and a few miles one side or the other will not injuriously affect us. I may take the result as near enough for our purposes.

29th.—A short rain-squall passed over us last evening; it has cooled the ground a little. Economy is of course the order of the day in provisions. My son and I have managed to hoard up about one pound of flour and a pinch of tea; all our

sugar is gone. Now and then we afford ourselves a couple of spoonfuls of flour, made into paste. When we indulge in tea the leaves are boiled twice over. I eat my sun-dried camel-meat uncooked, as far as I can bite it; what I cannot bite goes into the quart-pot, and is boiled down to a sort of poor-house broth. When we get a bird we dare not clean it, lest we should lose anything.

More disasters this morning. One of our largest camels very ill; the only thing we could do for it was to pound four boxes of Holloway's pills, and drench the animal. I hope it may recover, for the loss would be ruinous, leaving us with only five camels, and two of them very weak and uncertain.

One of the Afghans apparently wrong in his head; but it would answer no good purpose to enter into details; he has caused us much inconvenience and trouble.

In the evening the camel was still very sick. When once ill there is little hope of them without suitable medicine, which we have not got, and long rest, which we cannot give.

Very cloudy, but no rain, though it appears to be falling to the southward.

30th.—Camel still very bad; going to try an

enema from the double-barelled breech-loader. Our difficulty of getting on will be greatly increased by the loss of this camel, which carries two men. We shall only have five indifferent camels to carry seven men, with provisions and water, the former light enough; but the water is very heavy, yet quite indispensable. Should the animal be unable to travel, we must kill it, and cut off as much fresh meat as we can carry.

The camel-man all right again, and the camel much better this evening. A very cloudy and close night.

31st.—Half a gale from the eastward; most disagreeable, as it blows the sand over everything, and prevents our lighting a fire.

We started from camp No. 98 at 4.15 a.m., our general course being slightly to the westward of south for eleven miles. The camels did the journey well. The wind choked up the well, but it answers our purpose when cleared. We are all most thankful to have got away from No. 98 at last. We have now two known waters to the southward, which will give us all the southing we want; but unfortunately no westing, and leaves us a longer distance for our rush than I like; but I fear we must try it.

The weather being a little cooler, and the camels well watered, we started again at 3.30 p.m. Reached our first well, over heavy sand-hills, at 7.30. There is not much water, but enough for our uses. We are now in lat. $20^{\circ} 20'$, and long. by account $123^{\circ} 10'$; so our position is good.

November 1st.—Moderately cool; sent to try the western well. If good enough for us to camp a day or two upon, we shall go to it this morning; if not, we must camp at the middle one, and get what water we can for the camels out of the three wells, distant about a mile or two from each other. Camped at the middle well; the other one having too much sand in it for a man to clear out. Tormented all night by the ants.

[A small black ant seems to have been the avowed enemy of this expedition. The ground literally swarmed with them, and a stamp of the foot brought them up in thousands. When the wearied men threw themselves down under the shade of a bush, to snatch the half-hour's slumber their exhausted frames required, the merciless little insects attacked them, and not only effectually routed sleep, but even rendered a recumbent position impossible. The scanty clothing possessed by the travellers was no protection; so feeble a bulwark was speedily under-run by the enemy, and their successful invasion announced by sharp painful nips from their powerful mandibles. Often, when the vertical sun poured down in full fierceness on their

heads, and the poor shade afforded even by a bush would have been an inestimable blessing, the travellers were driven away from the shelter by their relentless persecutors, and in despair flung themselves down on the burning sand, where it was too hot even for an ant. By day or by night the little insects gave them no respite.]

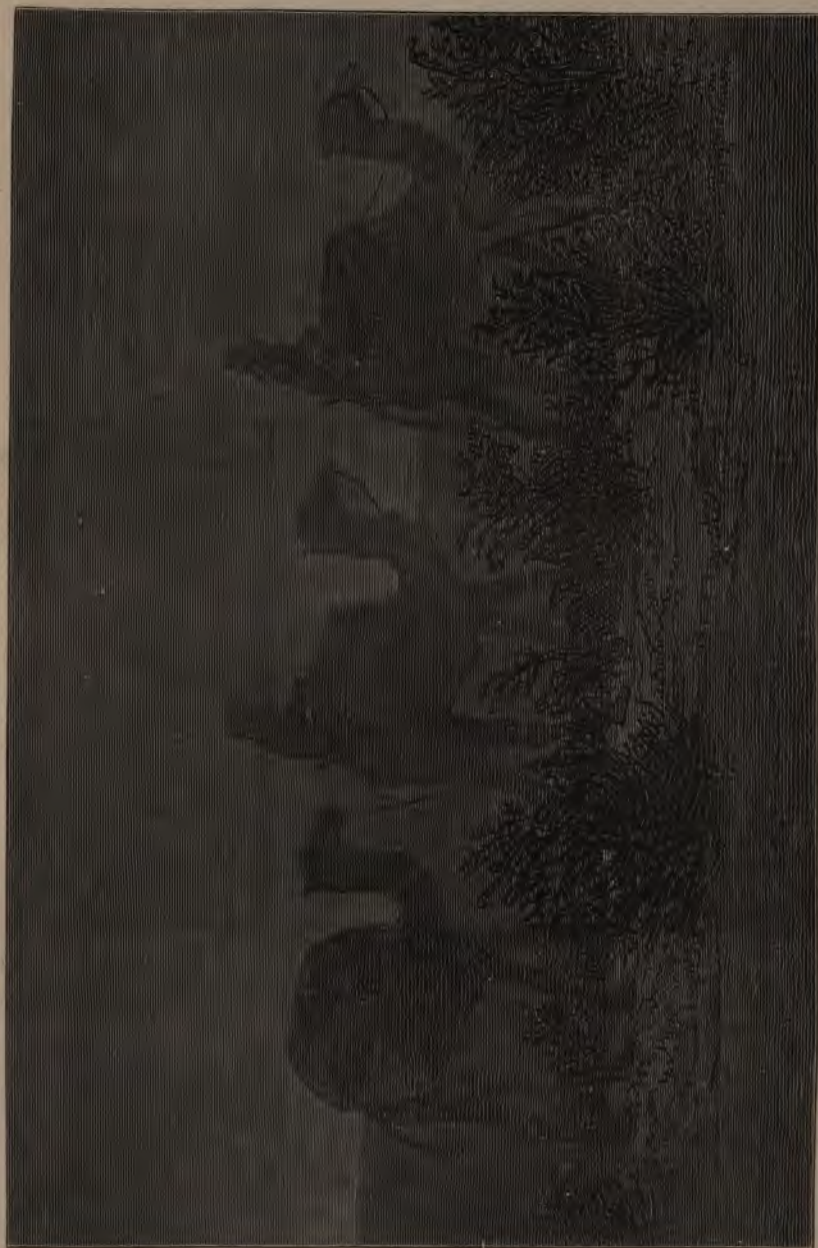
Sunday, 2nd.—The well affords sufficient for us, and I send the camels to the others. The ants prevent our doing anything; they leave us no peace. I am afraid of losing the moon, and the comparatively cool nights; we are also eating up our small stock of camel-meat, so I must try to commence our flight on the 4th.

The gale of adversity sends us scudding under bare poles; but it seems our only chance to make a rush for the Oakover. We cannot hit upon any water more to the westward to start from, so we must take our chance of finding a little somewhere in the 150 miles of desert which separate us from that river. We had the misfortune to lose our bottomless bucket by the falling in of our well yesterday; fortunately no one was down it at the time, or he would have been instantly killed, and we should have known nothing about it for a long time. The depth of this well was unusually great, being over nine feet.

3rd.—Hot day. The camels' well is a good one, and sufficient for their wants.

4th.—We are to commence our flight to the Oakover at sunset. God grant us strength to get through! Richard is very weak, and so am I. To get rid of a small box, we selected a few bottles of homœopathic medicines for use and ate up all the rest. How much of our property we had thrown away before we resorted to this expedient of lightening the loads may be guessed. I started later than we intended; our course about west by south. The sand-hills are more troublesome than we have had them for some time. When we wanted to look north and south for water, the sand-hills generally ran east and west; now, when we particularly wish to avoid crossing them, we are compelled to do so from their running north-west by west. The eclipse of the moon darkened our journey for several hours, but we made a favourable stretch westward for the last few miles of our night's journey. I could not go so far as I had hoped, from the fatiguing character of the country. Camped at 3.15 a.m.


5th.—A strong east wind is blowing. We are compelled to give up smoking whilst on short allowance of water. It is a deprivation, for smoke



March during an Eclipse.

and water stand in the place of food. We started west-south-west at 6.30 p.m., and made twenty-five miles, though we had most trying sand-hills to cross. I became quite unable to continue the journey, being reduced to a skeleton by thirst, famine, and fatigue. I was so emaciated and weak I could scarcely rise from the ground, or stagger half a dozen steps when up. Charley had been absent all day, and we were alarmed about him when he did not return at sunset. I knew not what to do. Delay was death to us all, as we had not water enough to carry us through; on the other hand, to leave the camp without the lad seemed an inhuman act, as he must then perish. It was six against one, so I waited till the moon was well up, and started at 9 p.m. We made about eight miles, and whilst crossing a flat heard, to our intense delight, a "cooe," and Charley joined us. Poor lad, how rejoiced we were to see him again so unexpectedly! The lad had actually walked about twenty miles after all the fatigue of the previous night's travelling; he had run up a large party of natives, and gone to their water. This news of more water permitted us to use at once what we had with us, and the recovery of Charley put us in good spirits. It may, I think,

be admitted that the hand of Providence was distinctly visible in this instance. I had deferred starting until 9 p.m., to give the absent boy a chance of regaining the camp. It turned out afterwards that had we expedited our departure by ten minutes, or postponed it for the same length of time, Charley would have missed us; and had this happened there is little doubt that not only myself, but probably other members of the expedition would have perished from thirst. The route pursued by us was at right angles with the course taken by the boy, and the chances of our stumbling up against each other in the dark were infinitesimally small. Providence mercifully directed it otherwise, and our departure was so timed that, after travelling from two to two hours and a half, when all hope of the recovery of the wanderer was almost abandoned, I was gladdened by the "cooe" of the brave lad, whose keen ears had caught the sound of the bells attached to the camels' necks. To the energy and courage of this untutored native may, under the guidance of the Almighty, be attributed the salvation of the party. It was by no accident that he encountered the friendly well. For fourteen miles he followed up the tracks of some blacks, though fatigued by a



day of severe work, and, receiving a kindly welcome from the natives, he had hurried back, unmindful of his own exhausted condition, to apprise his companions of the important discovery he had made. We turned towards the native camp, and halted a short distance from it, that we might not frighten them away. I was so utterly exhausted when we camped, at 3 a.m., that it was evident I never could have gone on after that night without more food and water. I would therefore thankfully acknowledge the goodness and mercy of God in saving my life by guiding us to a place where we got both.

7th.—Reached the well at 6 a.m. The natives fled at our approach, but returned after a little time. Wallaby were procured from them by barter. The fresh meat and plenty of water restored me for a time from my forlorn condition. There are so many natives that they drink more of their own water than we can well spare them. We obtained here the rest we all so much needed.

8th.—The natives all disappeared at daylight, and our hope of more food goes with them. I have invariably throughout the journey carried my pistol in my belt, but for the last few days its weight was too much for me, and I had put it in

my bag. Whilst lying under the shade of a blanket, with my head on the bag, one barrel unaccountably went off, and had not the muzzle been turned from me, I should have had the ball through my head. My life has again been given to me. Our position now is lat. $20^{\circ} 41'$, long. (by account) $122^{\circ} 30'$; so I hope we are not more than three days' journey from the Oakover, and we expect to find some tributary before reaching the river itself. We trust a better country may supply us with some means of getting food. The natives at this camp have a large sea-shell for a drinking-cup; they have also an old butcher's knife, and *seem* to be acquainted with cattle. I think they have seen white men before. That they possessed a knowledge of cattle was inferred from the signs they made, and from a tolerably good imitation of lowing when they saw the camels. All these things cheer us with the hope of our reaching a country in which we may find something to eat. The terrible sand-hills we have crossed have impeded our progress, and the country yields us nothing whatever; I cannot get even a crow or a snake. The sun-dried camel-meat, affords us only a nominal subsistence; there is not a particle of nourishment in it. We are not

particular, and whatever we could get we should eat. One of the camels reported to be ailing. These animals, though most enduring when well, appear liable to many sudden and unaccountable maladies. We started towards the west at 7 p.m. Crossed some sand-ridges; but the flats, though more extensive, are very bad for travelling over, being thickly covered with immense tussocks of spinifex. This and the ailing camel lessened our progress. Passed one small dry clay-pan and several ant-hills, which looks as if we were gradually clearing those frightful sand-hills that have worn us out and cost us so many camels. Camped at 3.30 a.m.

Sunday, 9th. — Started west at 6.15 p.m. Crossed a few sand-ridges and wide plains thickly covered with spinifex, also two or three water-courses (what a delight it is to see one again!) running, so far as we could judge in the dark, from south to north. The ground seems to be rising. Travelled about twenty-two miles.

10th. — After careful consideration of probabilities, and of the general appearance of the country, I incline to the opinion that having got into long. $121^{\circ} 50'$ (by account) it will be safer to run more to the southward and get nearer to lat. 21° . There

seems to be no coast-range extending from north to south across us. There are only continuous high plains, broken with sand-ridges, running west-north-west, and thus it is possible we might travel a long way parallel to the Oakover on a westerly course. Somewhere farther south this high land must break into the water-shed of all the rivers that fall into the western sea, and we shall be likely to cut the Oakover sooner by making twenty miles more southing. It is a most difficult country, and nothing better than a guess can be made as to what its features are at a short distance off. Certainly the view ahead is most cheerless, but it is unsafe to build upon appearances. I fancy the high open land with sand-ridges extends north-west to the sea and is broken to the southward by the coast range ; but it is useless to hazard opinions in this country, for there is not a single thing upon which we have formed strong conjectures and expectations that has not turned out in the end quite different from our anticipations. We have hoped for the best, but met with the worst ; still we have much reason to be thankful, for we are all alive and pretty well. Were it not for the sickness of our camels, our own starving condition, and continued want of water, the doubts

about the physical geography of the country could soon be set at rest.

We are now at our last morsel of camel-meat, and if we can get water I must kill again.

Started at 5.40 p.m., crossing a succession of very high sand-hills. At 8 p.m. saw what we took for a native fire to our left; turned towards it, but in a couple of miles it disappeared and we renewed our course. Latterly sand-hills have become more distant from each other and less high. Travelled over a good deal of burnt ground, but got on pretty well. Camped at 3 a.m.

11th.—With all the care we can take of the camels, and with the lightest possible loads, they can barely do twenty miles in the whole night, so we have yet a good stretch of country between us and the river.

We killed our last meat on the 20th October; a large bull-camel has therefore fed us for three weeks. It must be remembered that we have no flour, tea, or sugar, neither have we an atom of salt, so we cannot salt our meat. We are seven in all, and are living entirely upon sun-dried slips of meat which are as tasteless and innutritious as a piece of dead bark. Unless the game drops into our hands in great abundance we must kill another

camel directly we get to water. Most of us are nearly exhausted from starvation, and our only resource is a camel, which would disappear from before us in a twinkling.

Started at 6.15 p.m. Travelled five hours, then took a latitude, which put us in $21^{\circ} 2'$, so we turned west for three hours more, completing twenty miles over very hard country and heavy sand-hills.

12th.—We find no appearance of change in the country, and suppose that we are either more to the eastward than we suppose, or else the head of the Oakover is laid down more to the eastward than it is. The error is most probably mine, as it is difficult to keep the longitude quite correct after travelling so many months on a general westerly course. Our position is most critical in consequence of the weakness of the camels. They cannot get over this terrible country and stand the fierce heat without frequent watering and rest. Without water we are helpless.

3 p.m. I have decided to send Lewis, the two camel-men, and the black boy on ahead with the best and strongest camels, to try and reach the river, returning to us with water if successful. My son and Dennis White and myself remain behind, but following the first party as fast as our jaded

camels can take us. We have abandoned everything but our small supply of water and meat, and each party has a gun.

Lewis and his party started at 6 p.m. We left ourselves at 6.30. We could only make about four miles, when we lay down till 2 a.m. Starting again, we had made about eight miles when we were surprised by a voice, and found we had overtaken the advanced party, one of whose camels had knocked up on the previous night. This was a death-blow to our hopes of getting relief by sending them on first. We are hemmed in on every side; every trial we make fails, and I can now only hope that some one or more of the party may reach water sooner or later. As for myself, I can see no hope of life, for I cannot hold up without food and water. I have given Lewis written instructions to justify his leaving me, should I die, and have made such arrangement as I can for the preservation of my journal and maps. The advance party has started again, and we followed till a little after sunrise, when our camels showed signs of distress, and we camped. Should the advance party see likely smokes they are to turn to them.

My party at least are now in that state that, unless it please God to save us, we cannot live more

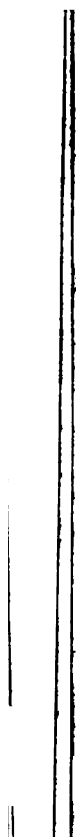
than twenty-four hours. We are at our last drop of water, and the smallest bit of dried meat chokes me. I fear my son must share my fate, as he will not leave me. God have mercy upon us, for we are brought very low, and by the time death reaches us we shall not regret exchanging our present misery for that state in which the weary are at rest.

We have tried to do our duty, and have been disappointed in all our expectations. I have been in excellent health during the whole journey, and am so still, being merely worn out from want of food and water. Let no self-reproaches afflict any one respecting me. I undertook the journey for the benefit of my family, and I was quite equal to it under all the circumstances that could be reasonably anticipated, but difficulties and losses have come upon us so thickly for the last few months that we have not been able to move; thus our provisions are gone, but this would not have stopped us could we have found water without such laborious search. The country is terrible. I do not believe men ever traversed so vast an extent of continuous desert.

We follow this afternoon on the advance tracks as far as our camels can take us. Richard shot



Worn out by Starvation.



me a little bird. It was only about the size of a sparrow, but it did me good. If the country would only give any single thing we could eat, I should do very well, but we cannot find a snake, kite, or crow. There are a few wallabies in the spinifex, but we cannot get them. Our miseries are not a little increased by the ants. We cannot get a moment's rest, night or day, for them.

13th.—My rear party could only advance eight miles, when the camels gave in. Our food is scanty enough, but our great want is water. We have a little, but dare not take more than a spoonful at a time, whilst the heat is so great that the slightest exposure and exertion bring on a parching thirst. We are as low and weak as living men well can be, and our only hope of prolonging our lives is in the advance-party finding some native camp; we have seen smokes, but are in too crippled a state to go to them.

14th.—Early this morning my son took our man White, and started in the direction of the smoke we had last seen. At midday, whilst I was sipping in solitude a drop of water out of a spoon, Lewis came up with a bag of water. Never shall I forget the draught of water I then got, but I was so weak that I almost fainted shortly after drink-

ing it. The advance party had run up a smoke and found a well about twelve miles off. Our lives were saved, but poor Charley was nearly killed. He had gone forward alone (at his own request, and as he had done before) to the native camp, the remainder of the party with the camels, keeping out of sight. The blacks treated Charley kindly, and gave him water, but when he cooed for the party to come up, and the camels appeared, then I suppose the men were frightened, and supposed Charley had entrapped them; they instantly speared him in the back and arm, cut his skull with a waddy, and nearly broke his jaw. I do not think this attack was made with any premeditated malice, but doubtless they would have killed the lad, had not the remainder of the party, rushing to his rescue, frightened them away. Unfortunately, the few medicines we had not eaten had, by some oversight, been left behind at the camp, where we abandoned almost everything but the clothes we happened to stand up in. Lewis returned to the well, and was to come out and meet us next day with more water. We started at sunset, but could not keep on the tracks for more than two miles when we camped.

15th.—We made another effort at daylight to

get on, but one of the camels broke down, though it had not carried a saddle. The poor beast had become quite blind, and staggered about in a most alarming way. We could not get her beyond a mile and a half, when she knocked up under the shade of a bush, and would go no farther. We therefore also sat down to await the water to be sent out to us. The heat was intense, and my son, having been obliged to walk because the camel could not carry him, suffered very greatly from thirst, and had not water been brought us before midday, it would have gone ill with him. Between 10 and 11 a.m. Lewis returned with water from the well.

The camel, though we gave it some water, could not move from the shade of the bush. We tried to drive it, and to drag it, but to no purpose, therefore we shot it. My son and White returned to the well for more water and to bring out camels to carry the meat. Lewis remained with me to cut up the camel and prepare it for carriage. We sent the head and tail, with the liver and half the heart and kidneys, to make soup for Charley, and a little picking for the rest. I hope the fact of the camel's head not having been turned towards Mecca, or its throat cut by a "True Believer,"

may not prejudice the camel-men against the use of what we send.

Cutting up the camel, and eating the "tit-bits," was the work of the day. We have now only five camels, and one of them so weak it cannot carry a saddle. Could we but reach the Oakover, we might manage some way or other, but the camels *must* take us there, or we shall never see it. I am sanguine now that we shall get there with at least four camels; two days ago I never expected to be able to leave the spot I was lying upon.

15th.—Last night there was a moist sea air and things we have not had for a long time. Lewis and I stand steadily to the flesh-pots, the meat is now all ready for transport when the camels come up. A little food, plenty of water, and a sound night's rest have done me much good, though I am still too shaky to walk more than a few yards. I took a latitude that night $21^{\circ} 0' 28''$, and time altitudes; watches $0^{\circ} 1' 25''$ slow. I have lost the shades of my prismatic compass, and don't like meddling much with the sun, having already lost the sight of my left eye.

Richard came up with the camels. Took ourselves and our small quantity of scraggy meat to camp, where I found Charley better than I had

expected, and I have now strong hopes he will survive. Native Australians take an immense deal of piercing and pounding without much permanent damage.

17th.—Dew again, and a westerly wind at night. We have found at this camp two large seashells, an old iron tomahawk, and part of the tire of a dray, which looks hopeful. The well here is a good one, so I shall not move the party from it till I know the distance I am from the river. I have made two attempts at a rush to cover unknown distances, each one bringing us close up to death. I will risk it no more, but shall send Lewis, who is the strongest of the party, and one companion with the two best camels, on a course from west by south to west-south-west. Two long night-marches ought, I think, to bring him to some change in the country indicative of the vicinity of the Oakover.

A few days ago I thought we had done with the sand-hills. It was a bitter mistake, we are as thick in them now as we were some months ago. Charley progressing favourably.

18th.—A good south-west wind all yesterday, with cloudy sky last night. This morning is calm, and it looks like rain to the west; not that rain would

be of much benefit to us now, for none of this country could hold a drop of surface water for ten minutes together, but it would cool the air and the ground, which is now almost red hot. Latitude by Aldeboran $20^{\circ} 55' 31''$.

Our detention here will most probably extend over this week. Lewis, who is to start to-night in quest of the river, can scarcely get back under five days, if so soon, and when he returns, the camels must have two or three days' rest. It is thus we are so dreadfully delayed, whilst a close approach to starvation is continually urging us forward. We have scarcely any meat, and that of the worst possible quality, part of the old scarecrow camel. She was very old, completely worn out and shrunk, so her meat can only last us a few days, and gives us no nourishment. It is certainly no better than the dog's meat from a knacker's yard, still it was better to eat her than let her die uselessly, for she could not move. We have, however, plenty of water, which is an inestimable blessing, and makes all our other wants comparatively unimportant.

19th.—The heat was so oppressive yesterday afternoon that Lewis's departure was put off till 5 a.m. to-day, when he and Halleem started, well

laden with water, but very deficient in food; my reckoning places us in longitude $121^{\circ} 23'$, lat. $20^{\circ} 55'$, so I hope we may soon get to the river.

My son is very ill, and so weak he can scarcely move. We have finished all the meat we could scrape up to boil, and are now reduced again to a few bits of dried camel and water for our daily fare. Very great heat.

20th.—Very hot wind and unsettled weather. Nothing doing—nothing to be done, except weak attempts to soften our scraps of tasteless food.

Charley going on famously, and I hope by the time we are able to leave this camp he may be all right.

My great anxiety is now how to keep the party alive. The meat we have will not last more than a week; it is so insufficient in quantity and quality that we are scarcely able to stand, and if there were any work to be done we should not have strength to do it. If to meet this pressing want I am obliged to kill another camel, the number will be so reduced that some of the party must walk, whilst none are equal to the exertion.

21st.—Thunder in the morning, every appearance of rain. Forenoon, rain seems passing away from us, indeed it would be better for us if it did,

for we do not want water here, having no shelter and very scanty clothing.

My son and I, like drowning men, catch at the smallest straw that seems to offer a hope of escape from our present miserable condition, and we now fancy that the entire absence of birds at this well may betoken the existence of surface water, and better food for them, not very far off; but this, like all other hopes and expectations, is probably a delusion. We must wait patiently for Lewis's return. God grant us strength to bear bad news if he bring it! The weather to-day is gusty, but a little cooler. Richard is very ill, and scarcely able to crawl.

At 4.30 p.m. there was a short thunder-storm and a little rain. The night was cloudy and damp.

22nd.—Shot a kite, which served for dinner. Our dried meat, such as it is, will not last two days more, if so long. This half-dead creature, only gave us about 3 lbs. of dried meat each, and not a bubble of fat was ever seen to rise on the buckets-full of its belongings that were boiled.

There was thunder in the afternoon, but no rain. Cool and pleasant, damp night.

Sunday, 23rd.—Cool morning; southerly wind, thunder at night. We are beginning to look

anxiously for the return of our scanty party. Three out of us five have been without any food for two days, excepting a few small fruits that grow about here; they are filled with black seeds, which are extremely bitter and have to be carefully extracted. We eat them raw and boiled; the fruit is not absolutely unpleasant, but would not be esteemed a delicacy had we anything else.⁵

We have but five camels left, one a weak, sickly cow; we may get a few days' work out of her after this long rest, and I do not wish to kill her; first, because she has not meat enough on her old bones to find us ten days' food; and secondly, because if I can save any camels to take into the settled parts of Western Australia, I should like to take a cow. It would cripple us greatly to kill a bull, but it would keep us probably for three weeks. No doubt this camel-killing will read badly, but the only alternative we have is to sit down and die, and they after us, for they could not get a drop of water without our help. Whether we kill or whether we don't kill, we are in a bad plight, and cannot help ourselves.

⁵ It is well for the travellers that the bitter seeds were so carefully extracted. Dr. Hooker believes them to have belonged to a species of *Strychnos*.

Richard is very weak to-day; firewood is scarce, and we can scarcely collect enough to boil a quart pot of water.

25th.—A very cool morning, which is a comfort to us. We have cleared up all the wild fruit in the vicinity of our camp, and are not able to go far to look for more.

I must defer killing till the last moment, but I don't see how I can put it off beyond to-morrow. 5 p.m. Lewis has returned; from his report I infer that he has struck the higher sources of the Oak-over; the distance is greater than I expected, but might I think be shortened by a due west course. The party being now all together, we killed a camel at sunset, and supped largely off heart and liver.

26th.—Boiled the kidneys and tongue for breakfast; we can scarcely believe it. All hands are employed in cutting up and jerking meat. The weather has been comparatively cool for the last day or two, which is a great relief to us.

27th.—A cool pleasant morning. I am most anxious to move on again, but our meat must be dried, and as soon as Richard is strong enough I wish him to go back, and recover a gun and

ammunition we left behind. It would be awkward to find ourselves amongst game on the river and have no gun.

On plotting-out Lewis's journal, I see he reached as high as lat. $21^{\circ} 30'$. I had never wished to get higher than 21° , and if, instead of following his course, we were to keep due west, I think the same distance of travelling would put us thirty miles or so lower down the river, and probably give us better ground for the camels; moreover, as the northern bend of the river runs down to $20^{\circ} 40'$, we must cut it at right angles, and could not possibly be in danger of running parallel with it. My assistants are, however, both averse to any other course than the known one, so I relinquish the plan, though I still think it best.

28th.—I sent off this morning to recover the gun and the rest of the things we had left behind. I had a narrow escape from a snake-bite last night. Whilst making from the camp-fire to my rug, I saw the reptile clearly in the moonlight, but not in time to alter my stride, and trod upon it about six inches above the tail. It turned upon me, of course, but whether it bit my trousers or not I don't know; if it did, I derived some

advantage from my extra thinness, as it could not find the leg inside them.

[They had seen very few snakes during the whole journey; indeed, their absence was much regretted, for a snake nicely roasted in the ashes is a delicacy not despised by bushmen who have good beef and mutton at their command, and is a favourite article of diet with the natives throughout the Australian Continent. This was the second time the leader had narrowly escaped death within the last few days; first, by the unexpected explosion of his pistol, and again by the bite of this reptile.]

29th.—A little light rain. I hope the summer rains are not going to set in early this year, as we have no protection whatever against them. The country we are now in would not hold surface-water, and when we get on the river we shall have plenty, so that heavy rain now would only perhaps introduce fever and ague amongst us. We have suffered greatly from starvation; but in other respects we are all in good health. 11 a.m.; Richard returned, bringing the gun and our water-casks.

Sunday, 30th.—We hope to start this evening if the water-casks will hold. My two comrades joined this day with me in the prayers and lessons of the first Sunday in Advent. I trust our

misfortunes may yet bear good fruit. 4 p.m.; casks will not hold, and I cannot go without them. The day has been very hot. We have had our last boiling of bones, but got nothing to eat off them, and the water they are boiled in is not so palatable as plain water. We must commence on the jerked meat; but our supply is so small, that injurious as it must be to our progress, another camel must fall when we get to water, or near the river. A camel looks a very large animal, but gives little meat compared with a bullock; and we have not a scrap of anything else, not even a pinch of salt. Firewood is so scarce here, and our cooking utensils so few, that we could scarcely keep our bucket boiling, or cook more than small portions of the hide; it takes about forty-eight hours continuous boiling, and is then very good.

December 1st.—Unable to start last night, and I dislike starting in the morning, because, on account of those who have to walk, an early halt is necessary before the sun gets too hot; and thus we consume a whole day's water, whilst performing a half-day's work.

I trust we may get off with the moonlight. It is very unlucky that Charley, who is by far our best walker, should be now unable to walk. We must

do our utmost to get on to some water quickly, that we may shorten our protracted starvation, and its consequent sickness. I hope to do so on the fourth day.

A high hot wind all day. We have four days of great trial to men in our weak condition; but if we can scramble over the next sixty miles we may hope to get some game. This is a most desolate camp; no firewood, little for the camels to eat, and not a living creature but ourselves. Even when the camel carcase was on the ground, not a single kite had the curiosity to come and see what was going on. There is water, but nothing else.

Started at 10 p.m.; the earliest hour at which we could get water enough to satisfy all the camels. As three of the party had to walk, and the flats and sand-hills were extremely bad, our progress was slow; by 3.30 a.m. we had made ten miles; then camped.

2nd.—Toiled along for twenty miles; hoped to have got an hour or two of sleep, but the ants forbade it. Night-work, tropical heat, no sleep, poor food, and very limited allowance of water, are, when combined, enough to reduce any man's strength; it is no wonder then that I can

scarcely crawl. What a country! did ever men before traverse such a tract of desert? I think not.

3rd.—Another twenty miles. Again tormented with ants, and could get no rest. They will not allow us to have any shade. I cannot stay under a bush, but am compelled in sheer despair to throw myself on the burning sand; and let the sun pour down upon me; this makes it too hot for the ants, and almost too hot for me also.

4th.—Moved off this wretched place at noon; the camels did not feed, and we could get no rest, so there was no use in stopping; but one camel quickly knocked up with the heat, and we camped till 7 p.m. I became so ill this afternoon that I was quite unable to sit on the camel, and had to be tied at full length on the animal's back. What a jolting I got, as the long-legged animal took me head-foremost down the steep sand-hills.

These sand-hills never left us till we got on to the stony range, where at 2.15 a.m. we camped on a rocky creek, tributary to the Oakover.

We are all most thankful to have escaped with our lives out of the horrible desert which has so long hemmed us in on every side. We are now clear, and if we can by any means procure subsistence

on the river and save our camels, we shall get down nicely. I cannot describe our joy at being once more on surface-water. The camels behaved nobly, and carried us over this last twenty miles in seven hours.

5th.—We halted on the creek; it is a very stony place, and there is little to be got, except some small red-rock pigeons, and a few bronze-wings in the evening; but these are very difficult to get at, and I think nearly all that were shot were kindly given to me. I am much better, but Richard is lamentably weak, and in trying to walk across some rocks, fell, and gave himself a very ugly wound in the leg. A sharp rock cut a large piece out of the shin. This unfortunate accident gave much pain and inconvenience.

6th.—Started early down the creek. What a change from the terrible country we have so long been on! How beautiful the trees and the rank vegetation looked!

We saw a nice place, with plenty of eatable birds flying about it, but could not stop there, as two of the party had gone on to look for a lost book, and they expected us to overtake them.

At 10.30 we camped on a brackish water, a poor place, and unfit to remain in. Some of the

party had been two days without food, and the only thing we could get here was bulrush roots.⁶ They are very nutritious, and indeed very good, when of proper age, and either roasted in the ashes or boiled.

We returned to the place we had left in the morning. My son remained in a stony gap we passed, to try to shoot some wallaby. We camped on the creek, at the urgent request of the camel-men, who said they were quite exhausted. Killed a camel by moonlight. We supped off the handiest parts of the inside, and lay down thoroughly tired. The ground was covered with stones, and infested with ants, so we could not be still for half an hour.

Sunday, 7th.—A most miserable day. Trifling as it may appear, the ants prevent our having a moment's rest, night or day, and we don't know where or how to escape them. We cut up and jerked the camel-meat; it is surprising how little nourishment there is in this food; it appears to do us no good. Caught a few small fish, which were greatly relished, and of real benefit.

8th.—A few more small fish were caught to-day. As we must let our meat dry, and eat up all that can be got from the bones, I remain here.

⁶ Probably a species of *Typha*.

The three camels now left will be all the better for a few days' rest, with plenty of water. This is a very rough creek, but it is even now, after this long drought, splendidly supplied with water. There are large rocky cisterns, as square and smooth as if cut by the hands of a man.

Whether a more generous diet will restore me, I cannot say; but at present, though not starving, I am so shaken by past suffering, that I require support from some one when travelling over anything like broken ground. Richard is in great pain from his wound, and a perfect cripple. The heat is very trying.

I now find my aneroid barometer is spoilt. This is a great misfortune, as I don't know when it got injured, and therefore cannot tell the date up to which its daily readings can be relied upon. I never anticipated such an instrument going wrong; but it was a great mistake on my part not to have taken a second one. I have three watches constantly going, and perhaps an explorer should have each instrument in triplicate, that he may more readily detect the one in error.

9th.—Two of us slept, or rather passed the night, on the banks of another water-hole (or basin), to try for some fish at daylight, but we

could not get a single bite. A light twine-net would now be worth its weight in diamonds to us, let no Australian traveller ever go out again without one.

For the last three days we have been living on fresh meat, but none of us find ourselves a bit stronger, in fact we are falling off day by day, and if this continue, the strongest will be unequal to the least exertion.

The only plan I can devise, though full of danger in consequence of the near approach of the summer tropical rains, is to locate the party on the best place we can find on the Oakover, then to send two men down the river, to look for the station of the settlers, and procure us some help both in food and carriage; without flour we shall never recover our strength to walk. By this plan, too, I should be able to send word that we are still alive.

We had no sleep again last night, owing to the tormenting ants. These terrible insects never sleep, and are just as numerous and busy on the bare rock as they were on the soft sand or loose stones.

10th.—We started on the journey down the creek, but could only make three miles over very

rough but pretty country, with many magnificent gorges; if we had only provisions and time, these ranges would well repay a careful examination.'

I have never seen any creek so splendidly watered, although there does not appear to have been any rain here for the last twenty months. Most of the waters are in large rocky basins, and there is no escape for them except by evaporation; the high, indelible marks on the rocks show the great depth of water in good seasons, as well as the length of time it remains at that level. There is no district half as well watered in the Mac-Donnell Ranges, so far as we saw.

11th.—We continued down the creek, and cut the Oakover at the distance of about seven miles, a little below where the creek joins it. Our lati-

' "I observe that they have not been named; had it been within my province to name them, I should have liked to have marked them as the Rawlinson Ranges. This would have given me a double pleasure, as a tribute to the high talent that has raised Sir Henry Rawlinson to his present eminent position as President of the Royal Geographical Society; also, because we were at one time brother-officers in the Bombay army, Sir Henry being, if I rightly recollect, an ensign in the 1st Grenadiers Regiment, when I was an ensign attached to the 2nd Grenadiers; but as the ranges belong to Western Australia, and were not discovered by me, I could not take this liberty without the special sanction of his Excellency Governor Weld, whom I was not fortunate enough to meet."—P. E. W.

tude is $21^{\circ} 11' 23''$. We branded a tree, to mark the spot at which we came upon the river.

This must be a noble river when the floods come down. The bed is wide and gravelly, fringed with magnificent cajeput or paper-bark trees. How grateful is its lovely and shady refuge from the burning sun after the frightful sand-hills in which we have been so long baked! I was lost in admiration. We camped on a water-hole, but the bed of the river was dry.

We shot some cockatoos, and had some camel's foot for a meal. This latter is a delicacy, but troublesome to cook. I shall, no doubt, appear to dwell too much upon eating; but it is difficult for starving men to keep their minds from thinking of what they once had, and now so urgently need. The heat is increasing daily.

12th.—Went three miles down the river to another water-hole and camped, as I am anxious to send Lewis off without delay. We had a beautiful ride, but this is not a better place for birds than the one we left. I obtained a shag—*Phalacrocorax Carboïdes* (Gould)⁸—for breakfast; the flesh

⁸ The habits of this bird are precisely similar to those of the Cormorant of Europe.

is not particularly delicate, but the inner parts are large and savoury.

Wrote my letters; whether they will ever reach their destination, I know not.

13th.—I sent off Lewis and one Afghan on the only two camels that would travel. They are to look for the station of Messrs. Harper and Co.; we do not know how far it may be, or whether it may not have been abandoned; but must take our chance; it is the only one we have.

It blew to-day half a gale of wind from the northward. Richard's leg is still very bad, and he is quite unable to walk.

14th.—I should have liked during Lewis's absence to have crept down the river, so as to reduce his return distance, but our only camel is completely done up, and we can get no more work out of the poor beast. Neither my son nor myself can walk a hundred yards. Dennis White has no boots, so he cannot get over the stones. The Afghan and Charley might travel a couple of miles a day; still, could we all walk a little, we must have some animal to carry our blankets and the bucket we cook in. The camel has plenty of water and good-looking feed, but it keeps falling off; the desert has been too much for it, as it has been for us.

We must kill the creature in due course for food, and can only hope it will not die before its day arrives. We cannot get any game at this hole, and the ground is too low to be safe at this uncertain time of year, so we move down a little tomorrow. Floods occur in Australia without much or any warning.

15th.—Went a short way down the river to a gully with a good water-hole, and fixed our camp on high ground on the edge of the river.

Trusting to game is a very precarious mode of getting food. One day a few small fish may be caught, next day not one will look at the bait. There are bustards, but we can only see them; there are no opossums; the ducks dislike sitting down by us, and we are not able to go to them. The trees have all been carefully searched by the blacks for native honey, they have left none for us; could we find some, it would be an indescribable treat after having been so long without sugar and salt. Though we are in a better country, we can get little beyond our camel-meat. Richard does his best, but he is quite lame, and very weak; as for myself, I cannot stagger 100 yards, and the recoil of a gun would knock me down.

I am quite satisfied that we could not have

travelled three miles a day, and that our only chance lies in getting succour from the station.

A rough high wind all day; cloudy, and threatening rain, which will damage us greatly, as we have no clothes and no shelter.

A steady rain fell all night, after a heavy gale of wind. We have large fish in our water-hole, but can't catch them.

16th.—Cloudy and cool. We have a beautiful place for bathing, and enjoy it greatly in our dirty, dilapidated condition. Rain off and on all day and night, greatly increasing our discomfort and spoiling the few things we possess; we are nearly naked, lying on the wet ground, and wet through ourselves; yet we none of us suffer in point of health, it is simply unpleasant.

17th.—A fine forenoon; dried ourselves. Misfortune seems, both in small and great matters, to dog us with unwearied persistence. Richard got a large fish at his bait this morning, but before he could land it his line was bitten in two; the loss of a delicious breakfast was no small disappointment to hungry men.

The day has been fine, and we are all well dried again, ready for the next soaking. This is the

first rain we have had since the 1st August; when we were in the sandy desert, it would have been beyond all price to us—but now that we are well supplied with water, rainy weather seems likely to stop us as much as want of water did before. I waited four months at Alice Springs for the summer rain to help me over the country—none fell; now I am about 100 miles from the finish, the summer rain seems likely to come on early, and may keep us out till we are web-footed and speckle-stomached. We count the hours of Lewis's absence, and hope for his return in about ten days; we cannot realize the idea of getting a bit of bread again. Our camp-followers are not provident with their food, and I shall have to kill our last camel soon.

18th.—Richard went up the river to try for some birds. He shot one teal, and a hawk was kind enough to strike a fine black duck which he rescued from its talons, and which gave us a splendid dinner. We cannot get the fish to bite, which is very tantalizing. Night set in squally and wet with strong north wind.

19th.—I hope the new moon may bring us fine weather. We cannot jerk our meat without the sun, and we must kill it immediately, there not

being a scrap of food in the camp. Shot a bird which looked like a pheasant, but unfortunately rather small.⁹ It cleared up at noon, so we killed, skinned, and cut up our last camel. Heavy feeding all evening ; fine night..

20th.—To our great surprise we were awakened at 3 a.m. by the roaring of running water. The river was down, running with a current of about three knots an hour. In the evening there was not a drop of water in the bed of the river,—in the morning a stream 300 yards wide was sweeping down with timber and ducks floating on it. It was well for us we had shifted our camp and got on high ground. The sight was most beautiful at sunrise, and indeed this is a noble river, even high up it as we are.

Jerking meat and eating all day ; the weather is most favourable. What a change, from draining a quart pot an hour from a sand-hole under intense heat and thirst, to our present quiet

⁹ This very remarkable bird has all the appearance of a pheasant, although it is in reality much more nearly allied to the cuckoos. It is no doubt the *Centropus maelurus*, which is probably a mere variety of *C. Phasianus* (the "pheasant-cuckoo of Australia"), figured in Gould's *Birds of Australia*. Little is known of the habits of either, but they are distributed over the entire Australian continent.



The Last Camel.—Camp on the Oakover.

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admiration of a gliding stream such as the Oakover!

21st.—A beautiful day; the meat is drying nicely, but there is very little of it; and that very poor; no wonder, as the beast was quite worn out, and had been carrying a load from February to December without a rest. We are boiling down the hide, and hope for good food from it; the head, feet, and tail are the treasures.

The river is drying up again, but this flood will fill all the water-holes, and we shall find water everywhere when we begin to travel down stream.

22nd.—Another fine day for our meat; a good roasting sun. The flood has left us a magnificent water-hole, thirty to forty feet deep, and nicely shaded. We enjoy floating in it, for we are so weak on land, we feel a peculiar delight in the support the water affords us.

23rd.—A very hot day. Obtained two wood-ducks (*Dendrocygna Gouldii*) and a scrap of honey; how delicious it was, after having been so long deprived of the strengthening and useful properties of sugar! My son and I no longer eat the hide; we do not find it does us the least good in adding to our strength, whilst it smells and tastes so exactly like a carpenter's glue-pot, it makes us sick.

Our camp is infested with scorpions, which is unpleasant, as we all go about bare-footed. Sahleh the camel-man is a professed oriental snake-charmer, and declares he can handle snakes and scorpions with impunity. I listen with becoming outward gravity, but as he happens to have lost the use of one hand and arm from the stroke of a scorpion, I have not much inward faith in his powers of enchantment. He himself accounts for the mishap by a disparaging statement in respect to the scorpion's birth, it was a base-born scorpion, and stung him whilst he was asleep. Thunder and lightning with a little rain during the night.

24th.—It looks as if heavy rain were not far from us. We are now on our jerked meat again. Got to-day a small wallaby and a cock pheasant. This bird has regular black bristles on its neck instead of feathers.

I am now beginning to hope for Lewis's speedy return. If there really be any station on the De Grey, he ought to have reached it in five days, and allowing the same time to come back, with two or three days at the station to collect horses and stores, he should be due after a fortnight's absence. This is his twelfth day.

Our great fear is that there may be no station

at all upon the De Grey (these far-off stations are sometimes suddenly abandoned), and that he may make for Roebourne. How he can hold out for such a distance on his scanty supply of food, or how we are to keep up on ours for such a length of time, I know not. We must hope no such misfortune will happen to us, for we are quite unable to walk.

Christmas Day.—We cannot but draw a mental picture of our friends in Adelaide sitting down to their Christmas dinner, whilst we lie sweltering on the ground starving, and should be thankful to have the pickings out of any pig's trough. This is no exaggeration, but literal truth. We cut out three bee-holes to-day, but found no honey in any of them. No sign of Lewis. If he is not here by the close of Sunday next, I shall be obliged to suppose he has gone to Roebourne, in which case there can be no hope of his return for the next three weeks, and, except God grant us His help, we cannot live so long on our present supply.

Our lives have been preserved through many and great dangers, so my trust is in God's mercy towards us; it never fails, though it does not take always the course we look for.

We fancied we should find many opossums in

the gum-trees, but have not seen one. We have fish close to us, but though we deprive ourselves of the entrails of a bird as bait, they will not take it. We eat everything clean through, from head to tail. Prejudiced cooks may not accept my advice, but I am quite satisfied all birds ought to be cooked whole, extracting what you please afterwards. We omitted the latter operation, but this is a matter depending on circumstances.

Our last Christmas at Alice Springs was miserable enough, as we then thought, but the present one beats it out and out.

26th.—Desperately hot, but still dry. Obtained a shag and two white cockatoos. Richard's leg is improving, yet he is exceedingly weak; not very much better than I am.

27th.—Passed in our ordinary heated idleness.

28th.—Threatening rain, but none fell. How heavily time hangs on our hands! We drink, smoke, and sleep as much as we can, then talk about what we should like to eat.

29th.—Sahleh's finger is very bad indeed from the scorpion sting. The state of our blood allows no wound to heal of itself, and I have no medicine suitable to his case. If it continues to get worse without any prospect of surgical aid, some one

(not I) will have to chop his finger off with a tomahawk, or he will lose his arm and his life.

Lewis not having returned, I am compelled to think either that there is no station on the De Grey, or that he has missed it and gone on to Roebourne, in which case he cannot be back for a fortnight. Our position stands thus :—We have abundance of water, a little tobacco, and a few bits of dried camel. Occasionally an iguana or a cockatoo enlivens our fare ; and lastly, I hope the late rain will bring up some thistles or some pig-weed that we can eat. Our difficulties are, to make our meat last, though, so far from doing us good, we are all afflicted with scurvy, diarrhoea, and affection of the kidneys from the use of it. We cannot catch the fish, we cannot find opossums or snakes, the birds won't sit down by us, and we can't get up to go to them. We thought we should have no difficulty in feeding ourselves on the river, but it turns out that from one cause or another we can get very little, and we are daily dropping down a peg or two lower.

I am, however, satisfied that sending down to look for the station was our best plan ; if it fail, the two who have been sent may save their lives, and we have a chance of saving ours if we can

only hold out, whereas had we all remained, we should have eaten the two camels that are gone, and scarcely have progressed twenty miles; after that our case would have been hopeless. I cannot tell how it may turn out, but I do not regret the measure. We must wait patiently. I am sure Lewis will do all that can be done. His endurance, perseverance, and judgment are beyond all praise, and his various services have been most valuable. My great fear is that the summer rains may set in and stop his return, but we must hope for the best.

A few hours after making the above entry in my journal Lewis returned with an ample supply for all our wants, and with six horses to carry us down!

I need not say how thankful we were, or how quickly we set to work at the food. The camels with the heavier supplies are to come up to-morrow. We all feel most grateful to Messrs. Grant, Harper, and Anderson for their promptitude and liberality.

30th and 31st.—My companions are all eating to the extent of their powers; for myself, I was



The Relief.

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too weak to stand the sudden change of food, and am ill in consequence.

January 1st, 1874.—I am still on the sick-list, but improving. The horses and camels will, I hope, be ready to start on Saturday. It appears that the station is sixteen miles from the coast and 170 miles from us. I never dreamt of its being such a distance.

I trust this new year may be more happy to us all than the last has been. Perhaps few men ever spent a more miserable one than we have.

Sahleh's finger looks very angry indeed. He may escape the tomahawk, but can hardly be spared the knife.

Thunderstorm in the evening.

2nd.—All hands recruiting.

3rd.—Started to-day on our journey down the river. For the first few days I had to be lifted on the horse's back, but exercise and food gradually enabled me to get through the day's work, and we reached the station, 170 miles distant, on the 11th January, 1874.

On the 21st we started on Messrs. Grant and Co.'s horses for Roebourne, and arrived there, 170 miles farther, on the 26th.

On the 17th February we left Copack on board

the "Mary Ann" schooner, put back on account of leaks on the 18th, and sailed again on the 21st, arriving at Fremantle on the 25th March, and proceeding to Perth the same day. Travelled 300 miles from Perth to Albany. On Wednesday sailed from Albany, and landed at Glenelg on Easter Sunday, 2.30 a.m.

I have now only to close my journal. All distances forwards and backwards included, our land travelling, as nearly as I can estimate it, has amounted to 4000 miles, and our sea voyage to 2000.

We have all got through our trials better than could have been expected. I believe my son and myself are the only two European sufferers. I have lost the sight of one eye, and my son is much shaken in health. Sahleh the Afghan left his finger in Roebourne. Beyond this I know of no harm that has been done.

We started with seventeen camels and ended with two. The following is the list of casualties :— 1 camel poisoned; 4 lost (they ran away); 3 left behind in the desert, unable to move; 7 killed

for food; 2 survivors left on the De Grey—total, 17.

And now, in conclusion, I would desire first to acknowledge with praise and thanksgiving the goodness and mercy of the Almighty God towards us in saving our lives through many perils. Then I would express our gratitude to the whole colony of Western Australia. Nothing could possibly exceed the hospitality, kindness, and generosity with which we were treated by private individuals, by communities, and by the Government. All our wants were anticipated; we were received as honoured guests, and welcomed everywhere by all classes. All our expenses were paid by the Government, and we were landed at the cost of Western Australia on the jetty at Glenelg.

The settlers in the north-west honoured us at Roebourne with a complimentary address and a public dinner. We were unavoidably detained there a long time, and I cannot therefore forbear mentioning the names of some gentlemen from whom we received special kindness. These were—Messrs. Grant, Harper, and Anderson, De Grey Station; Mr. McKay, of the Yule River; Mr. Sholl, Government Resident at Roebourne; Messrs. Pearse, Blackall, and others, also of Roebourne.

To Mr. G. Howlett also we are particularly indebted, not only for hospitality and kindness during our long stay at Roebourne, but also for his unremitting care for our comfort and welfare on board the schooner "Mary Ann," of which he was owner and our fellow-passenger.

On our arrival at Fremantle, at Perth, and at Albany, every possible honour and kindness were shown us by the municipalities, and by private persons, the Government at each place giving its official stamp to the general feeling of the colony by its desire to do us honour, and by the liberality with which that desire was carried into effect.

Our journey has been a very hard one, and we have suffered great privations; but they could not have been guarded against, because we did not know the nature of the country we had to cross. Others who may follow us will, I hope, find better country, and, as a necessary consequence, have easier work.

NOTE.

The following general remarks on the physical configuration of Australia and its geological causes, by Professor Owen, communicated in a

note to a friend of Colonel Warburton, will be read with great interest :—

In one of those wave-movements of earth's crust, which at its height divides the waters and "makes the dry land appear," the present continent of Australia resulted. But as such earth-wave attains the level which the sea is compelled by gravitation to keep, the contest begins between land and water. Attaining the upper fathoms of sea put in motion by planetary, atmospheric, and terrestrial influences, the opposition of the risen crust to the currents, undulations, storm-waves, leads to wear, waste, and destruction proportionate to the time elapsing ere the head-lands finally emerge above the dash of the highest tide-waves.

The south-eastern part of Australia has benefited by this battle, through the resulting loss, or capture by the sea, of much of the later (tertiary) deposits which it had received during its time of submergence, prior to the upheaval.

The consequent exposure of the older secondary, but especially of the primary or "palæozoic" formations, is the main geological condition, not only of the access to mineral wealth, but of the fertility of the Provinces of Victoria, New South Wales, and South Australia; through the quater-

nary subaerial formations which have here and there accumulated since those parts of Australia became dry land. Where the tertiary submarine formations have escaped the denuding action of the land's rise, they are, in the main, of a barren, sandy nature, opposing thirsty spinifex plains to the progress of the explorer.

Under the name "Western Australia," about one-third of the continent is assigned to this province. Such observation as has hitherto been made, recognizes a poor or barren sand and sandstone with small oases, few and far between. The testimony of Colonel Warburton coincides with this view of its geology; but conclusions should not be arbitrarily stretched beyond experience, nor further explorations discouraged.

According to the limits of present geological observation, what is the exception in the east and south-east becomes the rule in the west and south-west of Australia. Sandy gravels, or infertile whitish marls, become, to the westward, more uniformly barren sandstones of tertiary and cretaceous ages, and such seem, as a rule, to have formed the soil over which Colonel Warburton perseveringly pushed on his course.

NOTE ON THE VALUE OF CAMELS IN AUSTRALIAN EXPLORATION.

BY COLONEL P. E. WARBURTON.

(Note appended to his Journal.)

It may perhaps be useful to others, should they have an opportunity of getting camels, to know that, in my opinion, they are of all animals the most suitable to Australian explorations. It is quite certain we never should have reached the western coast with any others. No doubt in *some countries* it may be expedient to have horses as well as camels, but this entirely depends upon the character of the country. No horses could have lived with us.

Camels alone can travel over any but a boggy country. Horses alone are useless where there is no feed and little water, but excellent where both

are abundant. I, however, have never found any such country.

Camels *and* horses *may* do well together, but the chances are they will be in each other's way—that is, in dry, grassless country the camels get on and the horses cannot. Amongst salt lakes, swamps, &c., horses will do well and camels are useless, so they stop each other, unless the country is all through good for both—a very rare occurrence indeed.

Adelaide, 18th May, 1874.

SUBSEQUENT PROCEEDINGS OF
THE EXPEDITION,
AND
RETURN TO ADELAIDE.

BY C. H. EDEN.

It will be seen that after reaching the station of Messrs. Grant, Harper, and Anderson, Colonel Warburton says but little of himself and his companions, for the civilized districts had been attained, and his work as an explorer was over. But it is only due to the party to mention the enthusiastic reception they met with in every portion of Western Australia, where the importance of the work so successfully achieved was perhaps more apparent to the inhabitants of that colony than it could be to the people of England. Living on the spot, they knew the dangers and difficulties that had been surmounted, and their hearty recognition of the achievements of the explorers proved the great value they attached to their labours.

How terribly slowly the days must have dragged away for the five men left on the Oakover, the reader of the journal may well imagine. Fish were seen close to them, but they refused to be caught; other game they were too

300 SUBSEQUENT PROCEEDINGS OF THE EXPEDITION,

weak to look for ; death by starvation stared them in the face, unless Mr. Lewis speedily returned. The following is a copy of the letter addressed by Colonel Warburton to Mr. Elder, and entrusted to Mr. Lewis ; it gives a better idea in a few words of the forlorn condition of the party than even the leader's entries in his diary :—

“ Camp on the Oakover, lat. $21^{\circ} 9'$,

“ December 13, 1873.

“ DEAR MR. ELDER,—We are all alive, and that is all. We have lost everything, and have only two camels left out of seventeen. Our journey has been difficult beyond all I had supposed possible. We are reduced to such a state by famine that we can scarcely crawl 100 yards, and are quite incapable of hard work, or indeed any work at all.

“ I send two men with two camels to try to get some help from the station on the De Grey, and this goes by them. I cannot now give you details, not knowing who your agents in Perth are. I have written to the Governor of Western Australia to take steps through your agent to send a small craft to take us to Perth. This is the only way we can get there. We are unable to go by land. It would require an entire new fit out, and would cost much.

“ I may safely say no exploring party ever endured such protracted suffering as we have done, nor did any one ever cross, with their lives, so vast an extent of continuous bad country. A man gets great credit for exploring such a country as we are now in : it is mere child's play ; whilst we unfortunates, I suppose, shall be called fools for fighting for months against misfortunes

and difficulties which have turned back others in two or three days.

"I hope to be able, when in Adelaide, to satisfy you that I have done all that could be done to get across. We have succeeded, and that is one consolation, but our lives have been saved only by the mercy and goodness of God. Our own arm could not help us out of the shadow of death that has fallen darkly upon us on several occasions.

"We are gaunt pictures of suffering, and have nothing but the few rags we stand up in.

"The monsoon may delay me.

"I shall of course hasten to Adelaide.

"Ever yours faithfully,

"P. EGERTON WARBURTON.

"The Hon. T. ELDER, M.L.C., Adelaide."

On the 29th of December the Colonel and his son were lying down near their bough-hut, listlessly watching the boy Charley, who had climbed a tree, in hopes of finding a little honey; suddenly the latter gave a yell, and the two white men started up, thinking some accident had befallen the lad, but before they could regain their feet, the cause of the black boy's emotion became visible: from the height he had attained he had seen the little cavalcade approaching; a few seconds more and there broke from out the scrub a string of horses driven by the gallant Mr. Lewis, who was accompanied by another white man from the De Grey station—the relief had arrived, their troubles were over.

Five days afterwards they all moved by easy stages down the river, and on the 11th of January they reached the hospitable dwelling of Messrs. Grant, Harper, and Anderson, and for the first time since 1872 the wanderers

302 SUBSEQUENT PROCEEDINGS OF THE EXPEDITION,

slept beneath the shelter of a roof. Owing to the kindness and solicitude of their hosts, who supplied the worn-out men with milk, eggs, bottled ale, &c., they were sufficiently restored to start from the station on the 21st of January, and arrived at Roebourne, a small township on the shores of the Indian Ocean, on the 26th.

Here all preparations to receive the visitors had been made by Mr. Sholl, the Government Resident; apartments were taken for them at the hotel, at the Government expense, and a public meeting convened, at which it was decided to do honour to Colonel Warburton and his party, by giving them a dinner, and by presenting an Address. Into the particulars of the banquet I need not enter, the Address was as follows :—

“ NORTH DISTRICT, WESTERN AUSTRALIA.

“ *To Colonel Warburton.*

“ SIR,—We who are now present, acting not only for ourselves, but for those belonging to our community who are prevented from being present on this auspicious occasion, beg to offer you and your party a sincere, warm, and hearty welcome to this the North District of Western Australia, and to congratulate you that, after boldly planning and undertaking the conduct of an expedition through a vast, arid, and totally unknown portion of Central Australia, you have nobly encountered and overcome difficulties and dangers of all kinds, which up to this time were apparently insurmountable, and have finally risen victorious over all obstacles without having sacrificed the life of even one human being to your heroic enterprise.

“ This is a result for which we cannot be too thankful to an ever-watchful and Omnipotent Providence, and it is

our opinion that the indomitable pluck, energy, and perseverance shown by yourself and party have entitled you to the lasting gratitude of the inhabitants of your own and neighbouring colonies.

"That your wanderings should have terminated in this district is a matter of congratulation to us, as we cannot but feel that the pastoral and mineral capabilities of our adopted country only required to be viewed and reported upon by a competent and disinterested person, for the natural result to follow of a large influx of settlers and stock to our vast pastoral lands, and of miners and capital to our neglected minerals.

"In conclusion, we beg to reiterate our hearty welcome to yourself and party, and trusting that you will soon be re-united to your expectant families and friends in South Australia, have the honour to subscribe ourselves, sir,

"Your sincere well-wishers,

"R. T. SHOLL.

"H. W. VENN.

"FREDK. PEARSE.

"T. RUTHERFORD RYLEY."

&c., &c. (Forty names in all).

The Colonel and his companions were unfortunate in the selection of a vessel to carry them southwards, for the "Mary Ann," the little craft in which they embarked, was both leaky and slow. Having been compelled to put back once, they got fairly away on the 21st of February, and, after a tedious passage of five weeks, reached Fremantle on the 25th of March. Here great preparations had been made to do them honour, but owing to some mistake, the Colonel was landed at the wrong jetty, at the imminent risk of a capsize on the bar, and the formal re-

304 SUBSEQUENT PROCEEDINGS OF THE EXPEDITION,

ception intended was a failure, to the great disappointment of the inhabitants. A little later on the Volunteers were under arms, and on the Colonel presenting himself, the following Address was read :—

*“ To Colonel P. Egerton Warburton, commanding Exploring
Party from South Australia.*

“ SIE,—We the Municipal Council and inhabitants of Fremantle offer you and your brave comrades our warmest congratulations on the successful completion of your long and trying journey, through what has been hitherto an unknown country, and your safe arrival at the principal port of the colony of Western Australia.

“ The difficulties to be overcome in the work of Australian exploration are acknowledged to be as formidable as are to be found in any part of our globe, and to meet these difficulties requires a combination of intelligence, energy, perseverance, and fortitude that few men possess ; and the fact that you have surmounted all obstacles, and borne up under so many privations, has awakened in all our minds the deepest feelings of gratitude and admiration.

“ The discoveries now to be revealed to the world by your report of the country through which you have passed will be not only an acquisition to scientific knowledge, but a boon to the growing population of this island continent, destined, we believe, at some future day, to be the seat of a great, a free, and intelligent nation.

“ Among the names of the pioneers of civilization, yours, sir, will hold a distinguished place ; and when we remember with regret, that so many brave men—such as Leichhardt, Burke, and Wills—have perished in similar attempts to explore the unknown portions of Australia,

we rejoice that you and your companions in your journey are spared to receive our congratulations.

"We are deeply grateful to Almighty God, by Whose kind Providence your lives have been preserved, and it is our hope, sir, that you may live for many years in the enjoyment of health and strength, cheered by the esteem of your fellow-men, and with the consciousness that you have accomplished a great and noble work.

"Signed on behalf of the Town Council and inhabitants of Fremantle,

"W. E. MARMION,

"Chairman, Town Council.

"Fremantle, March, 1874."

At Perth a hearty reception awaited the Colonel, and another Address was read :—

"To Colonel Peter Egerton Warburton, Leader of the South Australian Exploring Expedition.

"SIR,—We the Council and Burgesses of the city of Perth congratulate you on the successful termination of your enterprise. The brave spirit which animated Captain Roe, the Gregorys, and Austin, on our side of the continent, equally impelled Oxley, Sturt, Mitchell, Leichhardt, Stuart, and yourself on its eastern side. The results to civilization have been vast, and, purchased with much suffering, have placed your names in the front rank of benefactors to mankind. Last on the list, it must be cheering to you to know that, under Divine Providence having accomplished the difficult and hazardous undertaking entrusted to you, you have thus prepared the way for future explorers still further to disclose to us the characteristics and resources of our island continent. We

feel pride in being the first representatives of an Australian city to express to you their thanks and admiration of the energy, skill, and prudence you have displayed in the cause of exploration. We would also record our gratitude to God, Who has preserved the lives of yourself and brave companions through all the perils of the way, and thus enabled us to give you our hearty greeting to-day.

“ On behalf of the Council and Burgesses of Perth,

“ G. RANDELL,

“ *Chairman of Perth Municipality.*”

From Perth Colonel Warburton travelled overland to Albany, where he also met with an enthusiastic reception. But enough has been already said to show the spirit in which this colony received the wanderers. Too much praise can hardly be accorded to the West Australian community for the kindness and honours they showered down upon the explorers. The latter entered their boundaries worn-out, feeble, dying, and the colonists lodged them, fed them, and transported them from place to place, free of all charge, and were only too happy whenever an opportunity of helping the new arrivals in some form or another presented itself. It must be remembered that Western Australia had her own explorers in the field, but no littleness or jealousy of the achievements wrought by a party initiated in another colony was shown; a hearty welcome everywhere met the wanderers, combined with the utmost liberality on the part of all, from the distant Oakover in the North, to the port of Albany, where the explorers quitted Western Australian soil.

It is almost needless to say with what enthusiasm South Australia welcomed home her wandering sons. A great banquet, at which the Governor presided, and 220 people

sat down, was given to the explorers. The Legislative Assembly voted the sum of 1000*l.* to the leader, and 500*l.* to be divided amongst the other members of his party; but the greatest honour conferred upon Colonel Egerton Warburton was the award of the gold medal of the Royal Geographical Society for the year 1874, which was made in May, soon after the first intelligence of his achievement had been received. He revisited his native country in November last, after an absence of more than forty years, finding his aged mother, whom he had not seen during that period, still alive to greet him. The climate of England he found insupportable, after so long a residence in Australia, and he returned to Adelaide after a brief stay of five or six weeks. It will, no doubt, have been to him a source of much gratification to learn that Her Majesty the Queen, by the advice of the Secretary of State for the Colonies, has shown her appreciation of the importance of his work, by making him since his departure Companion of the Order of St. Michael and St. George.

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